

Ser	Glu	Lys	Phe	Arg	Asp	Val	Tyr	Asp	Tyr	Phe	Arg	Ala	Val	Leu	Gln		
		95					100					105					
cgc	gat	gag	agg	agc	gaa	cga	gcc	ttt	aag	ctc	acc	cga	gac	gct	att	387	
Arg	Asp	Glu	Arg	Ser	Glu	Arg	Ala	Phe	Lys	Leu	Thr	Arg	Asp	Ala	Ile		
		110					115					120					
gag	tta	aac	gcg	gcc	aac	tac	aca	gtg	tgg	cat	ttt	cgg	aga	gtt	ctc	435	
Glu	Leu	Asn	Ala	Ala	Asn	Tyr	Thr	Val	Trp	His	Phe	Arg	Arg	Val	Leu		
		125					130					135			140		
tta	agg	tcg	ctt	caa	aag	gat	cta	caa	gag	gaa	atg	aac	tac	atc	act	483	
Leu	Arg	Ser	Leu	Gln	Lys	Asp	Leu	Gln	Glu	Glu	Met	Asn	Tyr	Ile	Thr		
							145					150			155		
gcg	ata	att	gag	gag	cag	ccc	aaa	aac	tat	caa	gtt	tgg	cac	cac	agg	531	
Ala	Ile	Ile	Glu	Glu	Gln	Pro	Lys	Asn	Tyr	Gln	Val	Trp	His	His	Arg		
							160					165			170		
cga	gta	tta	gtg	gaa	tgg	ctg	aaa	gat	cct	tct	caa	gag	ctt	gag	ttc	579	
Arg	Val	Leu	Val	Glu	Trp	Leu	Lys	Asp	Pro	Ser	Gln	Glu	Leu	Glu	Phe		
							175					180			185		
att	gcc	gac	att	ctt	agt	cag	gat	gcc	aag	aat	tac	cat	gcc	tgg	cag	627	
Ile	Ala	Asp	Ile	Leu	Ser	Gln	Asp	Ala	Lys	Asn	Tyr	His	Ala	Trp	Gln		
							190					195			200		
cat	cga	cag	tgg	gtc	att	cag	gag	ttc	cga	ctt	tgg	gat	aat	gag	ctg	675	
His	Arg	Gln	Trp	Val	Ile	Gln	Glu	Phe	Arg	Leu	Trp	Asp	Asn	Glu	Leu		
							205					210			215		
cag	tat	gta	gac	cag	ctt	ctc	aaa	gag	gat	gtg	agg	aat	aac	tct	gtg	723	
Gln	Tyr	Val	Asp	Gln	Leu	Leu	Lys	Glu	Asp	Val	Arg	Asn	Asn	Ser	Val		
							225					230			235		
tgg	aac	caa	aga	cac	ttc	gtc	att	tct	aac	acc	act	ggc	tac	agt	gac	771	
Trp	Asn	Gln	Arg	His	Phe	Val	Ile	Ser	Asn	Thr	Thr	Gly	Tyr	Ser	Asp		
							240					245			250		

cgc gcg gtg tta gag cga gaa gtc cag tat act ctg gaa atg atc aag 819
 Arg Ala Val Leu Glu Arg Glu Val Gln Tyr Thr Leu Glu Met Ile Lys
 255 260 265
 tta gtg cca cat aat gag agc gca tgg aac tac ctg aaa ggg att ctg 867
 Leu Val Pro His Asn Glu Ser Ala Trp Asn Tyr Leu Lys Gly Ile Leu
 270 275 280
 cag gac cgt ggt ctt tct aga tac cct aat cta tta aat cag ttg ctt 915
 Gln Asp Arg Gly Leu Ser Arg Tyr Pro Asn Leu Leu Asn Gln Leu Leu
 285 290 295 300
 gat tta caa cca agc cac agt tct ccg tac ctg att gcc ttt ctt gtg 963
 Asp Leu Gln Pro Ser His Ser Ser Pro Tyr Leu Ile Ala Phe Leu Val
 305 310 315
 gat gtc tat gaa gac atg cta gaa aac cag tgt gac aac aag gag gac 1011
 Asp Val Tyr Glu Asp Met Leu Glu Asn Gln Cys Asp Asn Lys Glu Asp
 320 325 330
 att ctt aat aaa gca cta gag tta tgt gag atc cta gct aaa gaa aag 1059
 Ile Leu Asn Lys Ala Leu Glu Leu Cys Glu Ile Leu Ala Lys Glu Lys
 335 340 345
 gac act ata aga aag gaa tat tgg agg tat att gga cgg tcc ctt cag 1107
 Asp Thr Ile Arg Lys Glu Tyr Trp Arg Tyr Ile Gly Arg Ser Leu Gln
 350 355 360
 agt aaa cac tgc aga gaa agt gac ata ccg gcg agt gta tag 1149
 Ser Lys His Cys Arg Glu Ser Asp Ile Pro Ala Ser Val
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<211> 377

<212> PRT

<213> Mus musculus

<400> 375

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Gln	Pro	Gln	Glu	Glu	Glu	Met	Ala	Ala	Glu	Ala	Gly	Glu	Ala	Ala	Ala
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Ser	Pro	Met	Asp	Asp	Gly	Phe	Leu	Ser	Leu	Asp	Ser	Pro	Thr	Tyr	Val
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Leu	Tyr	Arg	Asp	Arg	Ala	Glu	Trp	Ala	Asp	Ile	Asp	Pro	Val	Pro	Gln
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Asn	Asp	Gly	Pro	Asn	Pro	Val	Val	Gln	Ile	Ile	Tyr	Ser	Glu	Lys	Phe
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Arg	Asp	Val	Tyr	Asp	Tyr	Phe	Arg	Ala	Val	Leu	Gln	Arg	Asp	Glu	Arg
				100				105						110	
Ser	Glu	Arg	Ala	Phe	Lys	Leu	Thr	Arg	Asp	Ala	Ile	Glu	Leu	Asn	Ala
				115				120						125	
Ala	Asn	Tyr	Thr	Val	Trp	His	Phe	Arg	Arg	Val	Leu	Leu	Arg	Ser	Leu
				130				135						140	
Gln	Lys	Asp	Leu	Gln	Glu	Glu	Met	Asn	Tyr	Ile	Thr	Ala	Ile	Ile	Glu

145 150 155 160
 Glu Gln Pro Lys Asn Tyr Gln Val Trp His His Arg Arg Val Leu Val
 165 170 175
 Glu Trp Leu Lys Asp Pro Ser Gln Glu Leu Glu Phe Ile Ala Asp Ile
 180 185 190
 Leu Ser Gln Asp Ala Lys Asn Tyr His Ala Trp Gln His Arg Gln Trp
 195 200 205
 Val Ile Gln Glu Phe Arg Leu Trp Asp Asn Glu Leu Gln Tyr Val Asp
 210 215 220
 Gln Leu Leu Lys Glu Asp Val Arg Asn Asn Ser Val Trp Asn Gln Arg
 225 230 235 240
 His Phe Val Ile Ser Asn Thr Thr Gly Tyr Ser Asp Arg Ala Val Leu
 245 250 255
 Glu Arg Glu Val Gln Tyr Thr Leu Glu Met Ile Lys Leu Val Pro His
 260 265 270
 Asn Glu Ser Ala Trp Asn Tyr Leu Lys Gly Ile Leu Gln Asp Arg Gly
 275 280 285
 Leu Ser Arg Tyr Pro Asn Leu Leu Asn Gln Leu Leu Asp Leu Gln Pro
 290 295 300
 Ser His Ser Ser Pro Tyr Leu Ile Ala Phe Leu Val Asp Val Tyr Glu
 305 310 315 320
 Asp Met Leu Glu Asn Gln Cys Asp Asn Lys Glu Asp Ile Leu Asn Lys
 325 330 335
 Ala Leu Glu Leu Cys Glu Ile Leu Ala Lys Glu Lys Asp Thr Ile Arg
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 Arg Glu Ser Asp Ile Pro Ala Ser Val
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<210> 376

<211> 2537

<212> DNA

<213> Mus musculus

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<221> CDS

<222> (36).. (2327)

<400> 376

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Thr Ser Ala Cys Lys Pro Ser Ser Val Arg Leu Ala Pro Ser Phe Ser
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ttc cat gct gct ggc ctt cag atg gct gca cag atg ccc cac tca cac    149
Phe His Ala Ala Gly Leu Gln Met Ala Ala Gln Met Pro His Ser His
          25             30             35
cag tac agt gac cgt cgc cag ccg agc ata agt gac cag cag gtg tct    197
Gln Tyr Ser Asp Arg Arg Gln Pro Ser Ile Ser Asp Gln Gln Val Ser
          40             45             50
gcc tta cca tat tct gac cag att cag caa cct cta act aac cag gtg    245
Ala Leu Pro Tyr Ser Asp Gln Ile Gln Gln Pro Leu Thr Asn Gln Val
          55             60             65             70
atg cct gac att gtc atg tta cag agg cgg atg ccc caa acc ttc cgt    293
Met Pro Asp Ile Val Met Leu Gln Arg Arg Met Pro Gln Thr Phe Arg
          75             80             85

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 Asp Pro Ala Thr Ala Pro Leu Arg Lys Leu Ser Val Asp Leu Ile Lys
 90 95 100
 aca tac aag cat att aat gag gtt tac tat gca aaa aag aag cga aga 389
 Thr Tyr Lys His Ile Asn Glu Val Tyr Tyr Ala Lys Lys Lys Arg Arg
 105 110 115
 cac caa cag ggc cag ggg gac gat tcc agt cat aag aag gag cgg aag 437
 His Gln Gln Gly Gln Gly Asp Asp Ser Ser His Lys Lys Glu Arg Lys
 120 125 130
 gtt tac aat gat ggt tac gat gat gat aac tat gat tat att gta aaa 485
 Val Tyr Asn Asp Gly Tyr Asp Asp Asp Asn Tyr Asp Tyr Ile Val Lys
 135 140 145 150
 aac ggg gaa aag tgg atg gat cgg tat gaa atc gac tcc tta ata ggc 533
 Asn Gly Glu Lys Trp Met Asp Arg Tyr Glu Ile Asp Ser Leu Ile Gly
 155 160 165
 aaa ggt tca ttt gga cag gtt gtg aaa gct tat gac aga gtg gag caa 581
 Lys Gly Ser Phe Gly Gln Val Val Lys Ala Tyr Asp Arg Val Glu Gln
 170 175 180
 gaa tgg gtc gcc att aaa atc atc aag aac aag aaa gcg ttt ctg aat 629
 Glu Trp Val Ala Ile Lys Ile Ile Lys Asn Lys Lys Ala Phe Leu Asn
 185 190 195
 caa gcc cag ata gaa gtg cgg ctg ctt gag ctc atg aac aaa cac gac 677
 Gln Ala Gln Ile Glu Val Arg Leu Leu Glu Leu Met Asn Lys His Asp
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 act gaa atg aag tac tac ata gtg cat ttg aaa cgc cac ttt atg ttt 725
 Thr Glu Met Lys Tyr Tyr Ile Val His Leu Lys Arg His Phe Met Phe
 215 220 225 230
 cga aac cat ctc tgt tta gtg ttt gaa atg ctg tcc tat aat ctc tat 773
 Arg Asn His Leu Cys Leu Val Phe Glu Met Leu Ser Tyr Asn Leu Tyr

235	240	245	
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Asp Leu Leu Arg Asn Thr Asn Phe Arg Gly Val Ser Leu Asn Leu Thr			
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cga aag ttt gcg caa cag atg tgc aca gca ttg ctt ttt ctt gcg act			869
Arg Lys Phe Ala Gln Gln Met Cys Thr Ala Leu Leu Phe Leu Ala Thr			
265	270	275	
cca gaa ctt agt atc att cac tgt gac tta aag cct gag aac atc ctt			917
Pro Glu Leu Ser Ile Ile His Cys Asp Leu Lys Pro Glu Asn Ile Leu			
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ctg tgt aac ccc aaa cgg agt gca atc aag att gtt gat ttt ggc agc			965
Leu Cys Asn Pro Lys Arg Ser Ala Ile Lys Ile Val Asp Phe Gly Ser			
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tct tgt cag ttg ggg cag agg ata tac cag tat att cag agt cgc ttt			1013
Ser Cys Gln Leu Gly Gln Arg Ile Tyr Gln Tyr Ile Gln Ser Arg Phe			
315	320	325	
tat cgg tct cca gag gtg cta ctg gga atg cct tat gac ctt gct atc			1061
Tyr Arg Ser Pro Glu Val Leu Leu Gly Met Pro Tyr Asp Leu Ala Ile			
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gac atg tgg tcc ctt gga tgt atc ttg gtt gaa atg cac act gga gag			1109
Asp Met Trp Ser Leu Gly Cys Ile Leu Val Glu Met His Thr Gly Glu			
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cct ctg ttc agt ggt gcc aat gag gtc gat cag atg aat aaa ata gtg			1157
Pro Leu Phe Ser Gly Ala Asn Glu Val Asp Gln Met Asn Lys Ile Val			
360	365	370	
gaa gtc ttg ggc atc cca cct gct cat att ctt gac caa gca ccg aaa			1205
Glu Val Leu Gly Ile Pro Pro Ala His Ile Leu Asp Gln Ala Pro Lys			
375	380	385	390
gca aga aag ttc ttt gag aag ttg ccc gat ggc act tgg agc tta aag			1253

Ala Arg Lys Phe Phe Glu Lys Leu Pro Asp Gly Thr Trp Ser Leu Lys
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 aag acc aaa gat gga aaa cgg gag tac aaa cca cca gga acc cgt aaa 1301
 Lys Thr Lys Asp Gly Lys Arg Glu Tyr Lys Pro Pro Gly Thr Arg Lys
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 ctt cat aat att ctt gga gta gaa aca gga gga cct ggc ggg cgg cgt 1349
 Leu His Asn Ile Leu Gly Val Glu Thr Gly Gly Pro Gly Gly Arg Arg
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 Ala Gly Glu Ser Gly His Thr Val Ala Asp Tyr Leu Lys Phe Lys Asp
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 ctc att tta agg atg ctt gat tat gac ccc aaa act cgg att caa cct 1445
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 455 460 465 470
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 Tyr Tyr Ala Leu Gln His Ser Phe Phe Lys Lys Thr Ala Asp Glu Gly
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 Thr Asn Thr Ser Asn Ser Val Ser Thr Ser Pro Ala Met Glu Gln Ser
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 cag tct tca ggc acc acc tcc agc acc tcc tcc agc tca ggt gga tcc 1589
 Gln Ser Ser Gly Thr Thr Ser Ser Thr Ser Ser Ser Ser Gly Gly Ser
 505 510 515
 tcg gga acg agt aac agt ggg aga gcc agg tcg gat ccg acg cac cag 1637
 Ser Gly Thr Ser Asn Ser Gly Arg Ala Arg Ser Asp Pro Thr His Gln
 520 525 530
 cat cga cac agc ggt gga cac ttc gct gct gct gtc cag gcc atg gac 1685
 His Arg His Ser Gly Gly His Phe Ala Ala Ala Val Gln Ala Met Asp
 535 540 545 550

tgt gag aca cac agt ccc cag gtg cgc cag cag ttt ccg gct cct ctg	1733
Cys Glu Thr His Ser Pro Gln Val Arg Gln Gln Phe Pro Ala Pro Leu	
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Gly Trp Ser Gly Thr Glu Ala Pro Thr Gln Val Thr Val Glu Thr His	
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cct gtt caa gag aca acc ttt cat gta gcc ccc cag cag aac gca ttg	1829
Pro Val Gln Glu Thr Thr Phe His Val Ala Pro Gln Gln Asn Ala Leu	
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cat cat cac cat gga aac agt tcc cat cac cac cac cac cac cat cac	1877
His His His His Gly Asn Ser Ser His His His His His His His His	
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His His His His His Gly Gln Gln Ala Leu Gly Asn Arg Thr Arg Pro	
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Arg Val Tyr Asn Ser Pro Thr Asn Ser Ser Ser Thr Gln Asp Ser Met	
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Glu Val Gly His Ser His His Ser Met Thr Ser Leu Ser Ser Ser Thr	
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Thr Ser Ser Ser Thr Ser Ser Ser Ser Thr Gly Asn Gln Gly Asn Gln	
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gcc tat cag aac cgc cca gtg gct gct aac acc ttg gac ttt gga cag	2117
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680 685 690	
aat gga gct atg gac gtt aat ttg acc gtc tac tcc aat ccc cgc caa	2165
Asn Gly Ala Met Asp Val Asn Leu Thr Val Tyr Ser Asn Pro Arg Gln	

695 700 705 710
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 ggt cct gca cat tac atg act gaa gga cat ctg gcg atg aga caa ggg 2261
 Gly Pro Ala His Tyr Met Thr Glu Gly His Leu Ala Met Arg Gln Gly
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 gct gat aga gaa gag tct ccc atg aca gga gtt tgt gtg caa cag agt 2309
 Ala Asp Arg Glu Glu Ser Pro Met Thr Gly Val Cys Val Gln Gln Ser
 745 750 755
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 Pro Val Ala Ser Ser
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<210> 377

<211> 763

<212> PRT

<213> Mus musculus

<400> 377

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 His Lys Lys Glu Arg Lys Val Tyr Asn Asp Gly Tyr Asp Asp Asp Asn
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 Tyr Asp Arg Val Glu Gln Glu Trp Val Ala Ile Lys Ile Ile Lys Asn
 180 185 190
 Lys Lys Ala Phe Leu Asn Gln Ala Gln Ile Glu Val Arg Leu Leu Glu
 195 200 205
 Leu Met Asn Lys His Asp Thr Glu Met Lys Tyr Tyr Ile Val His Leu
 210 215 220
 Lys Arg His Phe Met Phe Arg Asn His Leu Cys Leu Val Phe Glu Met
 225 230 235 240
 Leu Ser Tyr Asn Leu Tyr Asp Leu Leu Arg Asn Thr Asn Phe Arg Gly
 245 250 255
 Val Ser Leu Asn Leu Thr Arg Lys Phe Ala Gln Gln Met Cys Thr Ala
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 Leu Leu Phe Leu Ala Thr Pro Glu Leu Ser Ile Ile His Cys Asp Leu

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Ile Val Asp Phe Gly Ser Ser Cys Gln Leu Gly Gln Arg Ile Tyr Gln		
305	310	315
Tyr Ile Gln Ser Arg Phe Tyr Arg Ser Pro Glu Val Leu Leu Gly Met		320
325	330	335
Pro Tyr Asp Leu Ala Ile Asp Met Trp Ser Leu Gly Cys Ile Leu Val		
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Glu Met His Thr Gly Glu Pro Leu Phe Ser Gly Ala Asn Glu Val Asp		
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Gln Met Asn Lys Ile Val Glu Val Leu Gly Ile Pro Pro Ala His Ile		
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Leu Asp Gln Ala Pro Lys Ala Arg Lys Phe Phe Glu Lys Leu Pro Asp		
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Gly Thr Trp Ser Leu Lys Lys Thr Lys Asp Gly Lys Arg Glu Tyr Lys		400
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Pro Pro Gly Thr Arg Lys Leu His Asn Ile Leu Gly Val Glu Thr Gly		
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Gly Pro Gly Gly Arg Arg Ala Gly Glu Ser Gly His Thr Val Ala Asp		
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Tyr Leu Lys Phe Lys Asp Leu Ile Leu Arg Met Leu Asp Tyr Asp Pro		
450	455	460
Lys Thr Arg Ile Gln Pro Tyr Tyr Ala Leu Gln His Ser Phe Phe Lys		
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Lys Thr Ala Asp Glu Gly Thr Asn Thr Ser Asn Ser Val Ser Thr Ser		480
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Pro Ala Met Glu Gln Ser Gln Ser Ser Gly Thr Thr Ser Ser Thr Ser		
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 Ser Asp Pro Thr His Gln His Arg His Ser Gly Gly His Phe Ala Ala
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740

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750

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760

<210> 378

<211> 2965

<212> DNA

<213> Mus musculus

<220>

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<222> (297).. (1916)

<400> 378

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Met

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20

25

30

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70	75	80	
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Arg Arg Arg Leu Asp Leu Ala Tyr Pro Leu Thr Val Gly Ser Ile Pro			
85	90	95	
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Lys Ser Gln Ser Trp Pro Val Gly Ala Ser Ser Gly Gln Pro Cys Ser			
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Cys Gln Gln Cys Leu Leu Val Asn Ser Thr Arg Ala Ala Ser Asn Ala			
115	120	125	
atc ctg gcc tcg cag cgc cgc aag gct ccc att gcg cca gcc gcg cct	731		
Ile Leu Ala Ser Gln Arg Arg Lys Ala Pro Ile Ala Pro Ala Ala Pro			
130	135	140	145
cca gcg ccc cct ccg ccc ccg ccg ccg ctg cca ccc gga gga cct ccg	779		
Pro Ala Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro Gly Gly Pro Pro			
150	155	160	
ggt gcg ctc gtt gtg cgc ccc agc gcc act ttc gcc gga gct gcg ctc	827		
Gly Ala Leu Val Val Arg Pro Ser Ala Thr Phe Ala Gly Ala Ala Leu			
165	170	175	
tgg gcc gca cct gcc acc ggc ccc acg gag cct gcg ccg cct cca gga	875		
Trp Ala Ala Pro Ala Thr Gly Pro Thr Glu Pro Ala Pro Pro Pro Gly			
180	185	190	
gtt ccc cca agg agc cct agt gcc ccc aac gga gcg ccc aca ccg ggc	923		

ccc gag ctt gtg ggc cgc ctg ggc cgc tgc ggc cac atg tat cac ctg 1403
 Pro Glu Leu Val Gly Arg Leu Gly Arg Cys Gly His Met Tyr His Leu
 355 360 365
 ctc tgc ctg gtg gcc atg tac tcc aat ggc aac aag gat ggc agc ctg 1451
 Leu Cys Leu Val Ala Met Tyr Ser Asn Gly Asn Lys Asp Gly Ser Leu
 370 375 380 385
 cag tgt cca acc tgc aaa gcc atc tac ggg gag aag aca ggg aca cag 1499
 Gln Cys Pro Thr Cys Lys Ala Ile Tyr Gly Glu Lys Thr Gly Thr Gln
 390 395 400
 cca cca ggg aag atg gag ttt cac ctc atc ccg cac tcg ctg cct ggt 1547
 Pro Pro Gly Lys Met Glu Phe His Leu Ile Pro His Ser Leu Pro Gly
 405 410 415
 ttt gca gac acc cag acg atc cgc atc gtc tat gac atc ccc acg ggc 1595
 Phe Ala Asp Thr Gln Thr Ile Arg Ile Val Tyr Asp Ile Pro Thr Gly
 420 425 430
 atc cag ggc cct gaa cat ccc aac cca ggc aag aag ttc aca gcc aga 1643
 Ile Gln Gly Pro Glu His Pro Asn Pro Gly Lys Lys Phe Thr Ala Arg
 435 440 445
 ggc ttc cct cgc cac tgc tac cta ccc aac aat gag aag ggc cga aag 1691
 Gly Phe Pro Arg His Cys Tyr Leu Pro Asn Asn Glu Lys Gly Arg Lys
 450 455 460 465
 gtg ctg aga ttg ctc atc acc gcc tgg gaa cgc aga ctc atc ttc act 1739
 Val Leu Arg Leu Leu Ile Thr Ala Trp Glu Arg Arg Leu Ile Phe Thr
 470 475 480
 atc gga aca tcc aac acc acg ggc gag tcg gac acc gtg gtg tgg aac 1787
 Ile Gly Thr Ser Asn Thr Thr Gly Glu Ser Asp Thr Val Val Trp Asn
 485 490 495
 gag att cac cac aag acg gag ttt ggt tcc aac ctc act ggt cac ggc 1835
 Glu Ile His His Lys Thr Glu Phe Gly Ser Asn Leu Thr Gly His Gly

500	505	510	
tac ccc gac gcc agc tac cta gac aac gtg ctg gct gag ctc acc gcc			1883
Tyr Pro Asp Ala Ser Tyr Leu Asp Asn Val Leu Ala Glu Leu Thr Ala			
515	520	525	
cag ggg gtt tct gag gcc atg gcc aag gcc tga ggcctgagtt gcccgccttc			1936
Gln Gly Val Ser Glu Ala Met Ala Lys Ala			
530	535	540	
ccttttgcct tgccctctagc ctggcacatg cctccctccg ctctcggcgg gaggagccag			1996
aagcgctaag gggatctggc tggtagctgt ggggggggtg atgggagtc accaggccag			2056
ctggctccaa cctgtggctt ccggcaagag cagcagagat aggaccacca gcaagggcga			2116
cttccctatg gaaaacgatg gcgctttgcc cticacacca cacacaaacg cacacgtgtc			2176
ctgttgcaag cagcactca cgcacgtaca ccacgtgcct ctccacttct cccagcttgg			2236
ggagaaagag acagaaaggc ccccatgaca tgtcctgttg aaataacctgt gtctccatta			2296
catctgtata ggctcgtccc ttcccagga cttagagtaa gcacgggata gtggggggga			2356
ctctgtaagg cttaagggg tcgctctgcc cctgggcctc aaccccttaa cccacgtcag			2416
cgctgccacc tgcccactga gcactgcaaa gccaatgggg tagaaacccc aggttattaa			2476
gtagcttttc gcaggccact ggggacgagg ctatcttaac ttigtgttg tgtctatctt			2536
tcccgggacc ctgacttctt ctcttctctg tgtccatctc ttgacctctg tctatcccag			2596
gcaaagacat cgtccttgcc tctgtaccgg ctcttcccc actaaaccgc tccggacatt			2656
tgagaccac ttctggcttc aggagcgagg ggaggaggcc ttgttcaggc tatacacgca			2716
tcaagctgag caggcagcaa agcgttaaac ttctccctgc ttgaaagtgg gcggtgggcg			2776
gctgatcgtc tcaggccaac cagaggcccc ttgccaggc aactcaccag ctccgcctct			2836
gaggattggc tgcigggatg gaagtcagcc aagctttaaa gggacgccag caattgctct			2896
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tccttaaaa			2965

<210> 379

<211> 539

<212> PRT

<213> Mus musculus

<400> 379

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 20 25 30
 Tyr Asp Met Asp Ile Cys Ile Thr Ile Gln Asn Ala Tyr Glu Lys Gln
 35 40 45
 His Pro Trp Leu Asp Leu Ser Ser Leu Gly Phe Cys Tyr Leu Ile Tyr
 50 55 60
 Phe Asn Ser Met Ser Gln Met Asn Arg Gln Thr Arg Arg Arg Arg Arg
 65 70 75 80
 Leu Arg Arg Arg Leu Asp Leu Ala Tyr Pro Leu Thr Val Gly Ser Ile
 85 90 95
 Pro Lys Ser Gln Ser Trp Pro Val Gly Ala Ser Ser Gly Gln Pro Cys
 100 105 110
 Ser Cys Gln Gln Cys Leu Leu Val Asn Ser Thr Arg Ala Ala Ser Asn
 115 120 125
 Ala Ile Leu Ala Ser Gln Arg Arg Lys Ala Pro Ile Ala Pro Ala Ala
 130 135 140
 Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro Gly Gly Pro
 145 150 155 160
 Pro Gly Ala Leu Val Val Arg Pro Ser Ala Thr Phe Ala Gly Ala Ala
 165 170 175
 Leu Trp Ala Ala Pro Ala Thr Gly Pro Thr Glu Pro Ala Pro Pro Pro
 180 185 190
 Gly Val Pro Pro Arg Ser Pro Ser Ala Pro Asn Gly Ala Pro Thr Pro
 195 200 205

Gly Gln Asn Asn Leu Ser Arg Pro Gly Pro Gln Arg Ser Thr Ser Val
 210 215 220
 Ser Ala Arg Ala Ser Ile Pro Pro Gly Val Pro Ala Leu Pro Val Lys
 225 230 235 240
 Asn Leu Asn Gly Thr Gly Pro Val His Pro Ala Leu Ala Gly Met Thr
 245 250 255
 Gly Ile Leu Leu Cys Ala Ala Gly Leu Pro Val Cys Leu Thr Arg Ala
 260 265 270
 Pro Lys Pro Ile Leu His Pro Pro Pro Val Ser Lys Ser Asp Val Lys
 275 280 285
 Pro Val Pro Gly Val Pro Gly Val Cys Arg Lys Thr Lys Lys Lys His
 290 295 300
 Leu Lys Lys Ser Lys Asn Pro Glu Asp Val Val Arg Arg Tyr Met Gln
 305 310 315 320
 Lys Val Lys Asn Pro Pro Asp Glu Asp Cys Thr Ile Cys Met Glu Arg
 325 330 335
 Leu Val Thr Ala Ser Gly Tyr Glu Gly Val Leu Arg Asn Lys Ser Val
 340 345 350
 Arg Pro Glu Leu Val Gly Arg Leu Gly Arg Cys Gly His Met Tyr His
 355 360 365
 Leu Leu Cys Leu Val Ala Met Tyr Ser Asn Gly Asn Lys Asp Gly Ser
 370 375 380
 Leu Gln Cys Pro Thr Cys Lys Ala Ile Tyr Gly Glu Lys Thr Gly Thr
 385 390 395 400
 Gln Pro Pro Gly Lys Met Glu Phe His Leu Ile Pro His Ser Leu Pro
 405 410 415
 Gly Phe Ala Asp Thr Gln Thr Ile Arg Ile Val Tyr Asp Ile Pro Thr
 420 425 430
 Gly Ile Gln Gly Pro Glu His Pro Asn Pro Gly Lys Lys Phe Thr Ala

435 440 445
 Arg Gly Phe Pro Arg His Cys Tyr Leu Pro Asn Asn Glu Lys Gly Arg
 450 455 460
 Lys Val Leu Arg Leu Leu Ile Thr Ala Trp Glu Arg Arg Leu Ile Phe
 465 470 475 480
 Thr Ile Gly Thr Ser Asn Thr Thr Gly Glu Ser Asp Thr Val Val Trp
 485 490 495
 Asn Glu Ile His His Lys Thr Glu Phe Gly Ser Asn Leu Thr Gly His
 500 505 510
 Gly Tyr Pro Asp Ala Ser Tyr Leu Asp Asn Val Leu Ala Glu Leu Thr
 515 520 525
 Ala Gln Gly Val Ser Glu Ala Met Ala Lys Ala
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<210> 380

<211> 2000

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (34).. (1362)

<400> 380

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Met Ala Ser Phe Thr Val Lys

1

5

gcc tat ctt ctg ggc aag gag gag gcg acc cgc gag atc cgc cgc ttc 102

Ala Tyr Leu Leu Gly Lys Glu Glu Ala Thr Arg Glu Ile Arg Arg Phe

10	15	20	
agc ttc tgc ttc agc ccg gag ccg gag gcg gaa gcc caa gcc gcg gcc	150		
Ser Phe Cys Phe Ser Pro Glu Pro Glu Ala Glu Ala Gln Ala Ala Ala			
25	30	35	
ggc ccg ggg ccc tgc gag agg ctg ctg agc cga gtg gct gtg ctg ttc	198		
Gly Pro Gly Pro Cys Glu Arg Leu Leu Ser Arg Val Ala Val Leu Phe			
40	45	50	55
ccc acg ctg agg cct ggc ggc ttc cag gcg cac tac cgc gat gag gat	246		
Pro Thr Leu Arg Pro Gly Gly Phe Gln Ala His Tyr Arg Asp Glu Asp			
60	65	70	
ggg gac ttg gtt gcc ttt tcc agt gat gag gag ctg aca atg gct atg	294		
Gly Asp Leu Val Ala Phe Ser Ser Asp Glu Glu Leu Thr Met Ala Met			
75	80	85	
tcc tat gtg aaa gat gac atc ttc cgc atc tac att aaa gag aag aag	342		
Ser Tyr Val Lys Asp Asp Ile Phe Arg Ile Tyr Ile Lys Glu Lys Lys			
90	95	100	
gag tgc cgg cgg gaa cat cgc cca cca tgt gct cag gag gca ccc cga	390		
Glu Cys Arg Arg Glu His Arg Pro Pro Cys Ala Gln Glu Ala Pro Arg			
105	110	115	
aac atg gtg cac ccc aat gtg atc tgt gat ggt tgc aac ggg cct gtg	438		
Asn Met Val His Pro Asn Val Ile Cys Asp Gly Cys Asn Gly Pro Val			
120	125	130	135
gtg gga act cgc tat aag tgc agt gtg tgc cca gac tac gac ctg tgc	486		
Val Gly Thr Arg Tyr Lys Cys Ser Val Cys Pro Asp Tyr Asp Leu Cys			
140	145	150	
agc gtg tgc gag ggg aag ggc ctg cac agg gaa cac agc aag ctc atc	534		
Ser Val Cys Glu Gly Lys Gly Leu His Arg Glu His Ser Lys Leu Ile			
155	160	165	
ttt ccc aac ccc ttt ggc cac ctc tct gat agc ttc tct cat agc cgc	582		

Phe Pro Asn Pro Phe Gly His Leu Ser Asp Ser Phe Ser His Ser Arg
 170 175 180
 tgg ctt cgg aag ctg aaa cat gga cac ttt ggc tgg cct ggc tgg gag 630
 Trp Leu Arg Lys Leu Lys His Gly His Phe Gly Trp Pro Gly Trp Glu
 185 190 195
 atg ggc cca ccg ggg aac tgg agc cca cgt cct cct cgt gca ggg gat 678
 Met Gly Pro Pro Gly Asn Trp Ser Pro Arg Pro Pro Arg Ala Gly Asp
 200 205 210 215
 ggc cgc cct tgc cct aca gct gag tca gct tct gct cca cca gaa gat 726
 Gly Arg Pro Cys Pro Thr Ala Glu Ser Ala Ser Ala Pro Pro Glu Asp
 220 225 230
 .ccc aat gtc aat ttc ctg aag aat gtg ggg gag agt gtg gca gct gcc 774
 Pro Asn Val Asn Phe Leu Lys Asn Val Gly Glu Ser Val Ala Ala Ala
 235 240 245
 ctc agc cct cta ggc att gag gtt gac att gat gtg gaa cat gga ggg 822
 Leu Ser Pro Leu Gly Ile Glu Val Asp Ile Asp Val Glu His Gly Gly
 250 255 260
 aag aga agc cgc ctg aca ccc act acc cca gaa agt tcc agc aca ggc 870
 Lys Arg Ser Arg Leu Thr Pro Thr Thr Pro Glu Ser Ser Ser Thr Gly
 265 270 275
 aca gaa gac aag agt aac act cag cca agc agc tgc tct tcg gaa gtc 918
 Thr Glu Asp Lys Ser Asn Thr Gln Pro Ser Ser Cys Ser Ser Glu Val
 280 285 290 295
 agc aaa cct gac ggg gct ggg gag ggc cct gct cag tct ctg aca gag 966
 Ser Lys Pro Asp Gly Ala Gly Glu Gly Pro Ala Gln Ser Leu Thr Glu
 300 305 310
 caa atg aaa aag ata gcc ttg gag tcg gtg gga cag cca gag gaa cag 1014
 Gln Met Lys Lys Ile Ala Leu Glu Ser Val Gly Gln Pro Glu Glu Gln
 315 320 325

atg gag tcg gga aac tgc tca gga gga gac gat gac tgg aca cat ttg 1062
 Met Glu Ser Gly Asn Cys Ser Gly Gly Asp Asp Asp Trp Thr His Leu
 330 335 340
 tct tca aaa gaa gtg gac cca tct aca ggt gaa ctc cag tct cta cag 1110
 Ser Ser Lys Glu Val Asp Pro Ser Thr Gly Glu Leu Gln Ser Leu Gln
 345 350 355
 atg cca gaa tcg gaa ggg cca agc tct cta gac ccc tca cag gaa gga 1158
 Met Pro Glu Ser Glu Gly Pro Ser Ser Leu Asp Pro Ser Gln Glu Gly
 360 365 370 375
 ccc aca ggg ctg aag gaa gct gcc cta tac cca cat ctc cca cca gag 1206
 Pro Thr Gly Leu Lys Glu Ala Ala Leu Tyr Pro His Leu Pro Pro Glu
 380 385 390
 gct gat ccc cgg ctg att gag tcc ctc tcc cag atg ctg tcc atg ggt 1254
 Ala Asp Pro Arg Leu Ile Glu Ser Leu Ser Gln Met Leu Ser Met Gly
 395 400 405
 ttc tcg gat gaa ggc ggc tgg ctc acc agg ctc cta cag acc aag aat 1302
 Phe Ser Asp Glu Gly Gly Trp Leu Thr Arg Leu Leu Gln Thr Lys Asn
 410 415 420
 tac gac atc ggg gct gct ctg gac acg atc cag tat tcg aag cac cct 1350
 Tyr Asp Ile Gly Ala Ala Leu Asp Thr Ile Gln Tyr Ser Lys His Pro
 425 430 435
 cca cca tfg tga tagtgctgtg gccaaagcccc accccctttg tcttgtagtt 1402
 Pro Pro Leu
 440
 gcatcacgta gagcagcagg gcttctatag ataggcccag tgtcttggca ttcttgtaga 1462
 atcttcaggt gggaatgtgt gatgcctttt caggcaatag gaaagtgcag gaggagagtt 1522
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 taagagggga ctgtccatag tgagtgaag gtggcaggca ggggcctaca gctcctaggg 1822
 aatggagaat tcatgtgaag ccgaatgaag gatcttatct tatactgtcc ccccttctaa 1882
 tggccactct ttagtggttg tgtctaattg taatgcttaa agcacaggac ccccatgtag 1942
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<210> 381

<211> 442

<212> PRT

<213> Mus musculus

<400> 381

Met	Ala	Ser	Phe	Thr	Val	Lys	Ala	Tyr	Leu	Leu	Gly	Lys	Glu	Glu	Ala
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Thr	Arg	Glu	Ile	Arg	Arg	Phe	Ser	Phe	Cys	Phe	Ser	Pro	Glu	Pro	Glu
			20					25					30		
Ala	Glu	Ala	Gln	Ala	Ala	Ala	Gly	Pro	Gly	Pro	Cys	Glu	Arg	Leu	Leu
		35					40					45			
Ser	Arg	Val	Ala	Val	Leu	Phe	Pro	Thr	Leu	Arg	Pro	Gly	Gly	Phe	Gln
		50				55					60				
Ala	His	Tyr	Arg	Asp	Glu	Asp	Gly	Asp	Leu	Val	Ala	Phe	Ser	Ser	Asp
	65				70				75					80	
Glu	Glu	Leu	Thr	Met	Ala	Met	Ser	Tyr	Val	Lys	Asp	Asp	Ile	Phe	Arg
			85						90					95	
Ile	Tyr	Ile	Lys	Glu	Lys	Lys	Glu	Cys	Arg	Arg	Glu	His	Arg	Pro	Pro
			100						105					110	
Cys	Ala	Gln	Glu	Ala	Pro	Arg	Asn	Met	Val	His	Pro	Asn	Val	Ile	Cys
			115						120					125	
Asp	Gly	Cys	Asn	Gly	Pro	Val	Val	Gly	Thr	Arg	Tyr	Lys	Cys	Ser	Val

130	135	140
Cys Pro Asp Tyr Asp Leu Cys Ser Val Cys Glu Gly Lys Gly Leu His		
145	150	155
Arg Glu His Ser Lys Leu Ile Phe Pro Asn Pro Phe Gly His Leu Ser		160
	165	170
Asp Ser Phe Ser His Ser Arg Trp Leu Arg Lys Leu Lys His Gly His		175
	180	185
Phe Gly Trp Pro Gly Trp Glu Met Gly Pro Pro Gly Asn Trp Ser Pro		190
	195	200
Arg Pro Pro Arg Ala Gly Asp Gly Arg Pro Cys Pro Thr Ala Glu Ser		205
	210	215
Ala Ser Ala Pro Pro Glu Asp Pro Asn Val Asn Phe Leu Lys Asn Val		220
225	230	235
Gly Glu Ser Val Ala Ala Ala Leu Ser Pro Leu Gly Ile Glu Val Asp		240
	245	250
Ile Asp Val Glu His Gly Gly Lys Arg Ser Arg Leu Thr Pro Thr Thr		255
	260	265
Pro Glu Ser Ser Ser Thr Gly Thr Glu Asp Lys Ser Asn Thr Gln Pro		270
	275	280
Ser Ser Cys Ser Ser Glu Val Ser Lys Pro Asp Gly Ala Gly Glu Gly		285
	290	295
Pro Ala Gln Ser Leu Thr Glu Gln Met Lys Lys Ile Ala Leu Glu Ser		300
305	310	315
Val Gly Gln Pro Glu Glu Gln Met Glu Ser Gly Asn Cys Ser Gly Gly		320
	325	330
Asp Asp Asp Trp Thr His Leu Ser Ser Lys Glu Val Asp Pro Ser Thr		335
	340	345
Gly Glu Leu Gln Ser Leu Gln Met Pro Glu Ser Glu Gly Pro Ser Ser		350
	355	360
		365

Leu Asp Pro Ser Gln Glu Gly Pro Thr Gly Leu Lys Glu Ala Ala Leu
 370 375 380
 Tyr Pro His Leu Pro Pro Glu Ala Asp Pro Arg Leu Ile Glu Ser Leu
 385 390 395 400
 Ser Gln Met Leu Ser Met Gly Phe Ser Asp Glu Gly Gly Trp Leu Thr
 405 410 415
 Arg Leu Leu Gln Thr Lys Asn Tyr Asp Ile Gly Ala Ala Leu Asp Thr
 420 425 430
 Ile Gln Tyr Ser Lys His Pro Pro Pro Leu
 435 440

<210> 382

<211> 494

<212> DNA

<213> Mus musculus

<400> 382

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 accggccgtg accaaaggca ggtcttccag aaaaggaaca gagaacggtg tgaacggcac 120
 agtcacatca aacggagcag actccccctg gaacaggaaa gagaagtcctt cgtaatggat 180
 cggaagctga ctgattattg tccccaaga atctgccttc tgctctatct ttcagcacta 240
 gcaatttttc ttttctaaaa atacagttaa tgctctttga tttctgctgt tgtcctgttc 300
 ctgcatcgta aagggcattg aggggaggat aatcactctg agtgagaaca ttgtagctta 360
 gactcagcta cctgccttca gaatagttaa gggaccacct tttttttctc tttttttctc 420
 ctcttttcta cctttttctt ttttttttc tctttctctt tgggttgggt ttggtttggt 480
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<210> 383

<211> 312

<212> DNA

<213> Mus musculus

<400> 383

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 gaggagctct ttctcgacct ttgtaaaaga atgatagaga cagcccaggt ggatgagaga 180
 gcaaaaggca atggctcgag tcaagccggg gctgcaaggc gaggtgtgca gatcatcgac 240
 gacgagcctc aagctcagag cagcggaggg tgctgttccct ccggctaact gctcagcctg 300
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<210> 384

<211> 2940

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (185).. (1651)

<400> 384

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 cacaagagca ttgcacagct gatctgcca gcctttcagc tgtgctgtgg ttggagccct 180
 gact atg gca gcc act ctt cta agg gca aag ccc aag gtg aca gtg tct 229
 Met Ala Ala Thr Leu Leu Arg Ala Lys Pro Lys Val Thr Val Ser
 1 5 10 15
 ttt gaa gat gtg tct gtg tac ttt aca aag aca gaa tgg agg ctt ctg 277
 Phe Glu Asp Val Ser Val Tyr Phe Thr Lys Thr Glu Trp Arg Leu Leu

	20	25	30	
gac ctc aaa cag agg acc ctc tac aag caa gtg atg ctg gag aac tac				325
Asp Leu Lys Gln Arg Thr Leu Tyr Lys Gln Val Met Leu Glu Asn Tyr				
	35	40	45	
agc cat ctg gtg tca gta gga ttt gct ttc tcc aag cct aac ctg gta				373
Ser His Leu Val Ser Val Gly Phe Ala Phe Ser Lys Pro Asn Leu Val				
	50	55	60	
tcc cag ctg gag cga ggg gag aag ccc tgg att aga gat gat gga atg				421
Ser Gln Leu Glu Arg Gly Glu Lys Pro Trp Ile Arg Asp Asp Gly Met				
	65	70	75	
gag agt gca gca aga tcc tgt gct ggg aat agg ata aag acc aag act				469
Glu Ser Ala Ala Arg Ser Cys Ala Gly Asn Arg Ile Lys Thr Lys Thr				
	80	85	90	95
ttg act tca aaa cca aaa ctt ttc gga aga ggt ctc ctc aga aat acc				517
Leu Thr Ser Lys Pro Lys Leu Phe Gly Arg Gly Leu Leu Arg Asn Thr				
	100	105	110	
tca cga tcc tca ttg cag aga cgt cct cac gat ttc agg cca aat ccc				565
Ser Arg Ser Ser Leu Gln Arg Arg Pro His Asp Phe Arg Pro Asn Pro				
	115	120	125	
att gta agg tac caa cac tcc aga atc gcg gat aag cga tat cta tgt				613
Ile Val Arg Tyr Gln His Ser Arg Ile Ala Asp Lys Arg Tyr Leu Cys				
	130	135	140	
cag cag tgt gga aaa tcc ttc agc cgc agc ttc aat ctc atc aaa cac				661
Gln Gln Cys Gly Lys Ser Phe Ser Arg Ser Phe Asn Leu Ile Lys His				
	145	150	155	
cgg att atc cac agc aga gag aaa cct tat gag tgc agc gag tgt ggg				709
Arg Ile Ile His Ser Arg Glu Lys Pro Tyr Glu Cys Ser Glu Cys Gly				
	160	165	170	175
aag cag ttc cag cgc agc tta gcg ctg ctg gag cat cag cgc atc cac				757

Lys Gln Phe Gln Arg Ser Leu Ala Leu Leu Glu His Gln Arg Ile His
 180 185 190
 agc ggc gac aag ccc tat gaa tgt ggc gag tgt ggc aaa acc ttc acg 805
 Ser Gly Asp Lys Pro Tyr Glu Cys Gly Glu Cys Gly Lys Thr Phe Thr
 195 200 205
 cgc agc tcc aac ctc gtc aag cac cag gtc atc cac agc agt gag atg 853
 Arg Ser Ser Asn Leu Val Lys His Gln Val Ile His Ser Ser Glu Met
 210 215 220
 cca ttt gtg tgc cgc atg tgt ggt aaa gtg ttc agg cgc agc ttc gcg 901
 Pro Phe Val Cys Arg Met Cys Gly Lys Val Phe Arg Arg Ser Phe Ala
 225 230 235
 .ctg ctt gag cac acg cgc atc cac agc ggc gag cgg ccc ttc gag tgc 949
 Leu Leu Glu His Thr Arg Ile His Ser Gly Glu Arg Pro Phe Glu Cys
 240 245 250 255
 acc gag tgc ggc aag gca ttc agc cga agc tcc aat ctc ata gag cat 997
 Thr Glu Cys Gly Lys Ala Phe Ser Arg Ser Ser Asn Leu Ile Glu His
 260 265 270
 cag cgc atc cac agt ggc cag aag ccc tac atc tgc aag gag tgc ggg 1045
 Gln Arg Ile His Ser Gly Gln Lys Pro Tyr Ile Cys Lys Glu Cys Gly
 275 280 285
 aag gcc ttc aag ggc gtc tgc cag gtc atc cac cac cag ctc atc cac 1093
 Lys Ala Phe Lys Gly Val Ser Gln Val Ile His His Gln Leu Ile His
 290 295 300
 cgc ggc gac aag ccc ttc acg tgc cat gag tat ggc aag gcc ttc cga 1141
 Arg Gly Asp Lys Pro Phe Thr Cys His Glu Tyr Gly Lys Ala Phe Arg
 305 310 315
 ggc ctc tca ggg ctc agc caa cac cag cgg gtc cac aga ggt gag aaa 1189
 Gly Leu Ser Gly Leu Ser Gln His Gln Arg Val His Arg Gly Glu Lys
 320 325 330 335

ccc tat gag tgc agc gaa tgc ggc cgg gcc ttt ggt cgc cgg gcc aac 1237
 Pro Tyr Glu Cys Ser Glu Cys Gly Arg Ala Phe Gly Arg Arg Ala Asn
 340 345 350
 ctc ttc aag cac cag gtg gtg cat ggt ggg gtg cgg ctc cag cac cgc 1285
 Leu Phe Lys His Gln Val Val His Gly Gly Val Arg Leu Gln His Arg
 355 360 365
 act cga ggg aag gga ttc cag cgc aag ctc ctg gag cat ctg cgg gac 1333
 Thr Arg Gly Lys Gly Phe Gln Arg Lys Leu Leu Glu His Leu Arg Asp
 370 375 380
 ctc cat ggg cag cag ccc caa gag gct gga gaa ggt agc tcc gca gaa 1381
 Leu His Gly Gln Gln Pro Gln Glu Ala Gly Glu Gly Ser Ser Ala Glu
 385 390 395
 ccc cag ccc atc gac acc aat gag aag ccc caa gtt tgt gag cgc tgc 1429
 Pro Gln Pro Ile Asp Thr Asn Glu Lys Pro Gln Val Cys Glu Arg Cys
 400 405 410 415
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 Ser Val Leu Glu Asp Lys Ser Leu Leu Ser Gln His Leu Glu Ala Gln
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 Glu Lys Pro His Gly Pro Ser Ser Pro

480

485

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His Leu Val Ser Val Gly Phe Ala Phe Ser Lys Pro Asn Leu Val Ser

50 55 60

Gln Leu Glu Arg Gly Glu Lys Pro Trp Ile Arg Asp Asp Gly Met Glu

65 70 75 80

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Thr Ser Lys Pro Lys Leu Phe Gly Arg Gly Leu Leu Arg Asn Thr Ser

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Arg Ser Ser Leu Gln Arg Arg Pro His Asp Phe Arg Pro Asn Pro Ile

115 120 125

Val Arg Tyr Gln His Ser Arg Ile Ala Asp Lys Arg Tyr Leu Cys Gln

130 135 140

Gln Cys Gly Lys Ser Phe Ser Arg Ser Phe Asn Leu Ile Lys His Arg

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Ile Ile His Ser Arg Glu Lys Pro Tyr Glu Cys Ser Glu Cys Gly Lys

165 170 175

Gln Phe Gln Arg Ser Leu Ala Leu Leu Glu His Gln Arg Ile His Ser

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Gly Asp Lys Pro Tyr Glu Cys Gly Glu Cys Gly Lys Thr Phe Thr Arg

195 200 205

Ser Ser Asn Leu Val Lys His Gln Val Ile His Ser Ser Glu Met Pro

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988/2644

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Met Ser Ser Glu

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 Cys Asp Val Gly Ser Ser Lys Ala Val Val Asn Gly Leu Ala Ser Gly

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30

35

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 Ser Ser Ser Pro Val Ser Pro Gln Glu Ser Pro Lys His Glu Ser Lys
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<400> 388

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 Arg Gly Thr Pro Ser Ser Ser Pro Val Ser Pro Gln Glu Ser Pro Lys
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 His Glu Ser Lys Ser Asp Glu Trp Lys Leu Ser Ser Ser Ala Asp Thr
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Asn Gly Asn Ala Gln Pro Ser Pro Leu Ala Ala Lys Gly Tyr Arg Ser
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 Val His Pro Ser Leu Ser Ala Asp Lys Pro Gln Gly Ser Pro Leu Leu
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 Pro Thr Ile Val Leu Leu Gln His Asn Arg Glu Gln Gln Lys Arg Leu
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 Pro Val Pro Thr Pro Ala Glu Leu Thr Ser Pro Gly Arg Ala Ser Glu
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 Arg Arg Ala Lys Asp Ala Ser Arg Arg Val Val Arg Ser Ala Gln Asp
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 Glu Arg Ser Lys Asp Trp Tyr Lys Thr Met Phe Lys Gln Ile His Lys
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 Ser Asp Asp Thr Lys Ser Pro Leu Ser Val Pro Arg Ser Lys Ser Glu
 260 265 270
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 Asp Trp Glu Pro Leu Asp Lys Lys Val Asp Thr Arg Lys Tyr Arg Ala

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 Ser Glu Ser Pro Arg His Phe Ile Pro Ala Asp Tyr Leu Glu Ser Thr
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 Arg Ala Lys Phe Asp Phe Lys Ala Gln Thr Leu Lys Glu Leu Pro Leu
 450 455 460
 Gln Lys Gly Asp Val Val Tyr Ile Tyr Arg Gln Ile Asp Gln Asn Trp
 465 470 475 480
 Tyr Glu Gly Glu His His Gly Arg Val Gly Ile Phe Pro Arg Thr Tyr
 485 490 495
 Ile Glu Leu Leu Pro Pro Ala Glu Lys Ala Gln Pro Arg Lys Leu Ala
 500 505 510
 Pro Val Gln Val Leu Glu Tyr Gly Glu Ala Ile Ala Lys Phe Asn Phe
 515 520 525
 Asn Gly Asp Thr Gln Val Glu Met Ser Phe Arg Lys Gly Glu Arg Ile
 530 535 540

cgccgagcgc cgccgcccgc gccgcccgcg ccgctccgct gcccgcgccg cccgcggctc 60
 ccg atg gag act gac gcg ccc cag ccc ggc ctc gcc tcc ccg gac tcg 108
 Met Glu Thr Asp Ala Pro Gln Pro Gly Leu Ala Ser Pro Asp Ser
 1 5 10 15
 ccg cac gac ccc tgc aag atg ttc atc gga gga ctc agt tgg cag acc 156
 Pro His Asp Pro Cys Lys Met Phe Ile Gly Gly Leu Ser Trp Gln Thr
 20 25 30
 acg cag gaa ggg ctg cgc gaa tac ttc ggc cag ttc ggg gag gtg aaa 204
 Thr Gln Glu Gly Leu Arg Glu Tyr Phe Gly Gln Phe Gly Glu Val Lys
 35 40 45
 gag tgt ctg gtg atg cgg gac ccc ctg acc aaa aga tcc agg ggt ttc 252
 Glu Cys Leu Val Met Arg Asp Pro Leu Thr Lys Arg Ser Arg Gly Phe
 50 55 60
 ggc ttc gtc act ttc atg gac cag gcg ggg gtg gat aaa gtg ctg gcg 300
 Gly Phe Val Thr Phe Met Asp Gln Ala Gly Val Asp Lys Val Leu Ala
 65 70 75
 caa tcg cgg cac gag ctc gac tcc aaa aca att gac ccc aag gtg gcc 348
 Gln Ser Arg His Glu Leu Asp Ser Lys Thr Ile Asp Pro Lys Val Ala
 80 85 90 95
 ttt cct cga aga gca cag cct aag atg gtc act cgg acg aag aag atc 396
 Phe Pro Arg Arg Ala Gln Pro Lys Met Val Thr Arg Thr Lys Lys Ile
 100 105 110
 ttc gtg ggg ggg ctg tct gtg aac acc acg gtg gaa gat gtg aaa cac 444
 Phe Val Gly Gly Leu Ser Val Asn Thr Thr Val Glu Asp Val Lys His
 115 120 125
 tat ttc gag cag ttc gga aag gtg gat gat gcc atg ctg atg ttc gac 492
 Tyr Phe Glu Gln Phe Gly Lys Val Asp Asp Ala Met Leu Met Phe Asp
 130 135 140
 aaa acc acc aac agg cac aga ggg ttt gga ttt gtc acg ttt gag agc 540

Lys Thr Thr Asn Arg His Arg Gly Phe Gly Phe Val Thr Phe Glu Ser
 145 150 155
 gag gac atc gta gag aaa gtt tgt gag atc cac ttc cat gaa atc aac 588
 Glu Asp Ile Val Glu Lys Val Cys Glu Ile His Phe His Glu Ile Asn
 160 165 170 175
 aac aaa atg gtg gaa tgc aag aaa gcc cag cca aag gag gtg atg tcc 636
 Asn Lys Met Val Glu Cys Lys Lys Ala Gln Pro Lys Glu Val Met Ser
 180 185 190
 ccg aca ggc tca gcc cgg ggc agg tct cgg gtc atg ccc tac gga atg 684
 Pro Thr Gly Ser Ala Arg Gly Arg Ser Arg Val Met Pro Tyr Gly Met
 195 200 205
 gat gcc ttc atg ctg ggt att ggg atg ctg ggt tac cca ggg ttc caa 732
 Asp Ala Phe Met Leu Gly Ile Gly Met Leu Gly Tyr Pro Gly Phe Gln
 210 215 220
 gcc acg acc tac gcc agc cgg agt tac aca ggc ctt gcc cct ggt tac 780
 Ala Thr Thr Tyr Ala Ser Arg Ser Tyr Thr Gly Leu Ala Pro Gly Tyr
 225 230 235
 acc tac cag ttc ccc gaa ttc cgt gta gag cgg agc cct ctc ccg agc 828
 Thr Tyr Gln Phe Pro Glu Phe Arg Val Glu Arg Ser Pro Leu Pro Ser
 240 245 250 255
 gcc cca gtc ctc ccc gag ctc aca gct atc cct ctc acg gct tat ggg 876
 Ala Pro Val Leu Pro Glu Leu Thr Ala Ile Pro Leu Thr Ala Tyr Gly
 260 265 270
 ccc atg gcg gcg gca gcg gcg gcg gca gct gta gtt cga ggg aca ggc 924
 Pro Met Ala Ala Ala Ala Ala Ala Ala Val Val Arg Gly Thr Gly
 275 280 285
 tct cac ccc tgg acg atg gct ccc cct cca ggt tcc act ccc agc cgc 972
 Ser His Pro Trp Thr Met Ala Pro Pro Pro Gly Ser Thr Pro Ser Arg
 290 295 300

aca ggg ggc ttc cta ggg acc aca agc ccc ggc ccc atg gct gag ctc 1020
 Thr Gly Gly Phe Leu Gly Thr Thr Ser Pro Gly Pro Met Ala Glu Leu
 305 310 315
 tac ggg gca gcc aac cag gac tcc ggg gtc agc agt tac atc agc gcc 1068
 Tyr Gly Ala Ala Asn Gln Asp Ser Gly Val Ser Ser Tyr Ile Ser Ala
 320 325 330 335
 gcc agc ccc gcc ccc agc act ggt ttc ggc cac agt ctt ggg ggt ccc 1116
 Ala Ser Pro Ala Pro Ser Thr Gly Phe Gly His Ser Leu Gly Gly Pro
 340 345 350
 ttg att gcc aca gcc ttc acc aat ggg tac cac tga aacagggagg 1162
 Leu Ile Ala Thr Ala Phe Thr Asn Gly Tyr His
 355 360
 aggtagcagg agcgccccag cctgcagctg actgaggacc agactgagcc agcaagggga 1222
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<210> 390

<211> 362

<212> PRT

<213> Mus musculus

<400> 390

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 1 5 10 15
 His Asp Pro Cys Lys Met Phe Ile Gly Gly Leu Ser Trp Gln Thr Thr

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Gln Glu Gly Leu Arg Glu Tyr Phe Gly Gln Phe Gly Glu Val Lys Glu		
35	40	45
Cys Leu Val Met Arg Asp Pro Leu Thr Lys Arg Ser Arg Gly Phe Gly		
50	55	60
Phe Val Thr Phe Met Asp Gln Ala Gly Val Asp Lys Val Leu Ala Gln		
65	70	75
Ser Arg His Glu Leu Asp Ser Lys Thr Ile Asp Pro Lys Val Ala Phe		80
85	90	95
Pro Arg Arg Ala Gln Pro Lys Met Val Thr Arg Thr Lys Lys Ile Phe		
100	105	110
Val Gly Gly Leu Ser Val Asn Thr Thr Val Glu Asp Val Lys His Tyr		
115	120	125
Phe Glu Gln Phe Gly Lys Val Asp Asp Ala Met Leu Met Phe Asp Lys		
130	135	140
Thr Thr Asn Arg His Arg Gly Phe Gly Phe Val Thr Phe Glu Ser Glu		
145	150	155
Asp Ile Val Glu Lys Val Cys Glu Ile His Phe His Glu Ile Asn Asn		160
165	170	175
Lys Met Val Glu Cys Lys Lys Ala Gln Pro Lys Glu Val Met Ser Pro		
180	185	190
Thr Gly Ser Ala Arg Gly Arg Ser Arg Val Met Pro Tyr Gly Met Asp		
195	200	205
Ala Phe Met Leu Gly Ile Gly Met Leu Gly Tyr Pro Gly Phe Gln Ala		
210	215	220
Thr Thr Tyr Ala Ser Arg Ser Tyr Thr Gly Leu Ala Pro Gly Tyr Thr		
225	230	235
Tyr Gln Phe Pro Glu Phe Arg Val Glu Arg Ser Pro Leu Pro Ser Ala		240
245	250	255

Pro Val Leu Pro Glu Leu Thr Ala Ile Pro Leu Thr Ala Tyr Gly Pro
 260 265 270
 Met Ala Ala Ala Ala Ala Ala Ala Val Val Arg Gly Thr Gly Ser
 275 280 285
 His Pro Trp Thr Met Ala Pro Pro Pro Gly Ser Thr Pro Ser Arg Thr
 290 295 300
 Gly Gly Phe Leu Gly Thr Thr Ser Pro Gly Pro Met Ala Glu Leu Tyr
 305 310 315 320
 Gly Ala Ala Asn Gln Asp Ser Gly Val Ser Ser Tyr Ile Ser Ala Ala
 325 330 335
 Ser Pro Ala Pro Ser Thr Gly Phe Gly His Ser Leu Gly Gly Pro Leu
 340 345 350
 Ile Ala Thr Ala Phe Thr Asn Gly Tyr His
 355 360

<210> 391

<211> 3999

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (199).. (1839)

<400> 391

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 ttcacccact cctctcggcc aggtccggcc tccccgcggg gtcacgcggc tgccccgggg 180
 acgatgaacg gaggataa atg gtg ccc aag gca gac agc ggt gcc ttc ctg 231

Met Val Pro Lys Ala Asp Ser Gly Ala Phe Leu
1 5 10
ctg ctc ttc ctg ctg gtt ctc act gtc acc gag ccg ctg cgg cca gag 279
Leu Leu Phe Leu Leu Val Leu Thr Val Thr Glu Pro Leu Arg Pro Glu
15 20 25
ctt cgg tgc aac cct ggg cag ttt gca tgt cac ggt ggt acc atc cag 327
Leu Arg Cys Asn Pro Gly Gln Phe Ala Cys His Gly Gly Thr Ile Gln
30 35 40
tgc ata ccc ctc ccc tgg cag tgt gat ggc tgg cca acg tgt gag gat 375
Cys Ile Pro Leu Pro Trp Gln Cys Asp Gly Trp Pro Thr Cys Glu Asp
45 50 55
aag agt gat gaa gcc gac tgt cca gaa gtg act gga gag gcc cgt cct 423
Lys Ser Asp Glu Ala Asp Cys Pro Glu Val Thr Gly Glu Ala Arg Pro
60 65 70 75
tat ggg aag gaa act gtg gat ctg cgg cag ggg cga gcc aga gga ggt 471
Tyr Gly Lys Glu Thr Val Asp Leu Arg Gln Gly Arg Ala Arg Gly Gly
80 85 90
gac ccc aca cac ttc cac aca gtg aac gtg gct cag cct gta cgc ttc 519
Asp Pro Thr His Phe His Thr Val Asn Val Ala Gln Pro Val Arg Phe
95 100 105
agc agg aaa tgc cca agt ggg tgg cac cac tat gaa ggc aca gcc agc 567
Ser Arg Lys Cys Pro Ser Gly Trp His His Tyr Glu Gly Thr Ala Ser
110 115 120
tgc tac cgg gtc tac ctc agt gga gag aac tac tgg gat gct gca cag 615
Cys Tyr Arg Val Tyr Leu Ser Gly Glu Asn Tyr Trp Asp Ala Ala Gln
125 130 135
acc tgt cag cgt gtg aat ggc tca ctt gct acc ttc tcc act gac cag 663
Thr Cys Gln Arg Val Asn Gly Ser Leu Ala Thr Phe Ser Thr Asp Gln
140 145 150 155

gag ctg cgc ttc gtc cta gcc cag gaa tgg gac cag cca gag cgg agc 711
 Glu Leu Arg Phe Val Leu Ala Gln Glu Trp Asp Gln Pro Glu Arg Ser
 160 165 170
 ttc ggc tgg aaa gac cag cgc aag ctc tgg gtt ggt tat cag tat gtc 759
 Phe Gly Trp Lys Asp Gln Arg Lys Leu Trp Val Gly Tyr Gln Tyr Val
 175 180 185
 att act ggc cgg aac cat tcc tta gaa ggt cgc tgg gaa gtg gca ttc 807
 Ile Thr Gly Arg Asn His Ser Leu Glu Gly Arg Trp Glu Val Ala Phe
 190 195 200
 aaa ggc tcc cca gaa gtg ttc ctg ccc cca gat ccc atc ttc gcc tct 855
 Lys Gly Ser Pro Glu Val Phe Leu Pro Pro Asp Pro Ile Phe Ala Ser
 205 210 215
 gcc atg tct gag aat gac aac gtg ttc tgc gcc cag ctc cag tgt ttc 903
 Ala Met Ser Glu Asn Asp Asn Val Phe Cys Ala Gln Leu Gln Cys Phe
 220 225 230 235
 cac ttt cct acc ctg agg cac cat gac ctc cac agc tgg cac gcc gag 951
 His Phe Pro Thr Leu Arg His His Asp Leu His Ser Trp His Ala Glu
 240 245 250
 agc tgc tct gag aag tct tgc ttt ctg tgt aaa aga agt cag acg tgt 999
 Ser Cys Ser Glu Lys Ser Ser Phe Leu Cys Lys Arg Ser Gln Thr Cys
 255 260 265
 gtt gat atc aaa gat aat gtg gtg gat gaa ggg ttc tac ttc act ccc 1047
 Val Asp Ile Lys Asp Asn Val Val Asp Glu Gly Phe Tyr Phe Thr Pro
 270 275 280
 aag gga gat gac cca tgc ttg agc tgt acc tgc cat cga ggg gag cct 1095
 Lys Gly Asp Asp Pro Cys Leu Ser Cys Thr Cys His Arg Gly Glu Pro
 285 290 295
 gag atg tgt gtt gct gcc ctg tgt gag cgg ccc cag ggg tgt cag cag 1143
 Glu Met Cys Val Ala Ala Leu Cys Glu Arg Pro Gln Gly Cys Gln Gln

300	305	310	315	
tac cgc aag gac cct aag gaa tgc tgc aaa ttc atg tgt ctg gac cca				1191
Tyr Arg Lys Asp Pro Lys Glu Cys Cys Lys Phe Met Cys Leu Asp Pro				
320	325	330		
gat ggc agc agc ctg ttt gac tcc atg gct agt ggg atg cgc ctg gtc				1239
Asp Gly Ser Ser Leu Phe Asp Ser Met Ala Ser Gly Met Arg Leu Val				
335	340	345		
gtc agc tgt atc tcc tcc ttc ctc atc ctc tcg ctg ctg ctt ttc atg				1287
Val Ser Cys Ile Ser Ser Phe Leu Ile Leu Ser Leu Leu Leu Phe Met				
350	355	360		
gtc cac cgg cta cgc cag cgg cgc cgg gag cgc atc gag tcc ctg att				1335
Val His Arg Leu Arg Gln Arg Arg Arg Glu Arg Ile Glu Ser Leu Ile				
365	370	375		
gga gca aac ttg cac cat ttc aac ctt ggc cgg agg atc cct ggc ttt				1383
Gly Ala Asn Leu His His Phe Asn Leu Gly Arg Arg Ile Pro Gly Phe				
380	385	390	395	
gac tat ggt cca gat ggg ttt ggc aca ggc ctc acg cca cta cat ctt				1431
Asp Tyr Gly Pro Asp Gly Phe Gly Thr Gly Leu Thr Pro Leu His Leu				
400	405	410		
tct gac gac ggg gaa ggt ggg act ttc cat ttc cac gac cct cca cct				1479
Ser Asp Asp Gly Glu Gly Gly Thr Phe His Phe His Asp Pro Pro Pro				
415	420	425		
cct tat aca gct tac aag tac cca gac atg gac cag ccg gat gat cca				1527
Pro Tyr Thr Ala Tyr Lys Tyr Pro Asp Met Asp Gln Pro Asp Asp Pro				
430	435	440		
cca cca ccc tat gag gcg tct atc aac cca gac agt gtg ttc tac gac				1575
Pro Pro Pro Tyr Glu Ala Ser Ile Asn Pro Asp Ser Val Phe Tyr Asp				
445	450	455		
cct gca gat gac gat gcc ttt gag cct gtg gag gcc agc ctg cca gcc				1623

Pro Ala Asp Asp Asp Ala Phe Glu Pro Val Glu Ala Ser Leu Pro Ala
 460 465 470 475
 cca aga gat ggt ggc att gaa ggt gca ttg ccc agg cac ttg gat cag 1671
 Pro Arg Asp Gly Gly Ile Glu Gly Ala Leu Pro Arg His Leu Asp Gln
 480 485 490
 ccg ctg ccc cct gca gag aca tcc tta gca gat ctg gaa gac tct aca 1719
 Pro Leu Pro Pro Ala Glu Thr Ser Leu Ala Asp Leu Glu Asp Ser Thr
 495 500 505
 gac agt agc agt gcc ctg ctg gtg cct cct gat ccc gcc cag agt gga 1767
 Asp Ser Ser Ser Ala Leu Leu Val Pro Pro Asp Pro Ala Gln Ser Gly
 510 515 520
 agc acc cca gct aca gaa gca ccg cca ggg ggt ggg cgc ctc ccc cgt 1815
 Ser Thr Pro Ala Thr Glu Ala Pro Pro Gly Gly Gly Arg Leu Pro Arg
 525 530 535
 gct tcc ctc aac act gtg gtt tag gtggctcagc ttgtggcccc ccgtgggcta 1869
 Ala Ser Leu Asn Thr Val Val
 540 545
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 gtctgagccc acagaccatc tgcgtcagac atccctctgc agagggccct tgccccctct 3309
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<210> 392

<211> 546

<212> PRT

<213> Mus musculus

<400> 392

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 20 25 30
 Gly Gln Phe Ala Cys His Gly Gly Thr Ile Gln Cys Ile Pro Leu Pro
 35 40 45
 Trp Gln Cys Asp Gly Trp Pro Thr Cys Glu Asp Lys Ser Asp Glu Ala
 50 55 60
 Asp Cys Pro Glu Val Thr Gly Glu Ala Arg Pro Tyr Gly Lys Glu Thr
 65 70 75 80
 Val Asp Leu Arg Gln Gly Arg Ala Arg Gly Gly Asp Pro Thr His Phe
 85 90 95
 His Thr Val Asn Val Ala Gln Pro Val Arg Phe Ser Arg Lys Cys Pro
 100 105 110
 Ser Gly Trp His His Tyr Glu Gly Thr Ala Ser Cys Tyr Arg Val Tyr
 115 120 125
 Leu Ser Gly Glu Asn Tyr Trp Asp Ala Ala Gln Thr Cys Gln Arg Val
 130 135 140
 Asn Gly Ser Leu Ala Thr Phe Ser Thr Asp Gln Glu Leu Arg Phe Val
 145 150 155 160
 Leu Ala Gln Glu Trp Asp Gln Pro Glu Arg Ser Phe Gly Trp Lys Asp
 165 170 175
 Gln Arg Lys Leu Trp Val Gly Tyr Gln Tyr Val Ile Thr Gly Arg Asn
 180 185 190
 His Ser Leu Glu Gly Arg Trp Glu Val Ala Phe Lys Gly Ser Pro Glu
 195 200 205
 Val Phe Leu Pro Pro Asp Pro Ile Phe Ala Ser Ala Met Ser Glu Asn

210	215	220	
Asp Asn Val Phe Cys Ala Gln Leu Gln Cys Phe His Phe Pro Thr Leu			
225	230	235	240
Arg His His Asp Leu His Ser Trp His Ala Glu Ser Cys Ser Glu Lys			
245	250	255	
Ser Ser Phe Leu Cys Lys Arg Ser Gln Thr Cys Val Asp Ile Lys Asp			
260	265	270	
Asn Val Val Asp Glu Gly Phe Tyr Phe Thr Pro Lys Gly Asp Asp Pro			
275	280	285	
Cys Leu Ser Cys Thr Cys His Arg Gly Glu Pro Glu Met Cys Val Ala			
290	295	300	
Ala Leu Cys Glu Arg Pro Gln Gly Cys Gln Gln Tyr Arg Lys Asp Pro			
305	310	315	320
Lys Glu Cys Cys Lys Phe Met Cys Leu Asp Pro Asp Gly Ser Ser Leu			
325	330	335	
Phe Asp Ser Met Ala Ser Gly Met Arg Leu Val Val Ser Cys Ile Ser			
340	345	350	
Ser Phe Leu Ile Leu Ser Leu Leu Leu Phe Met Val His Arg Leu Arg			
355	360	365	
Gln Arg Arg Arg Glu Arg Ile Glu Ser Leu Ile Gly Ala Asn Leu His			
370	375	380	
His Phe Asn Leu Gly Arg Arg Ile Pro Gly Phe Asp Tyr Gly Pro Asp			
385	390	395	400
Gly Phe Gly Thr Gly Leu Thr Pro Leu His Leu Ser Asp Asp Gly Glu			
405	410	415	
Gly Gly Thr Phe His Phe His Asp Pro Pro Pro Pro Tyr Thr Ala Tyr			
420	425	430	
Lys Tyr Pro Asp Met Asp Gln Pro Asp Asp Pro Pro Pro Pro Tyr Glu			
435	440	445	

Ala Ser Ile Asn Pro Asp Ser Val Phe Tyr Asp Pro Ala Asp Asp Asp
 450 455 460
 Ala Phe Glu Pro Val Glu Ala Ser Leu Pro Ala Pro Arg Asp Gly Gly
 465 470 475 480
 Ile Glu Gly Ala Leu Pro Arg His Leu Asp Gln Pro Leu Pro Pro Ala
 485 490 495
 Glu Thr Ser Leu Ala Asp Leu Glu Asp Ser Thr Asp Ser Ser Ser Ala
 500 505 510
 Leu Leu Val Pro Pro Asp Pro Ala Gln Ser Gly Ser Thr Pro Ala Thr
 515 520 525
 Glu Ala Pro Pro Gly Gly Gly Arg Leu Pro Arg Ala Ser Leu Asn Thr
 530 535 540
 Val Val
 545

<210> 393

<211> 907

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (97).. (771)

<400> 393

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 Met Ser Ser Lys Ser Met

gtt ctg ggt tac tgg gat atc cgc ggg ctg gct cat gct atc cgc atg 162
 Val Leu Gly Tyr Trp Asp Ile Arg Gly Leu Ala His Ala Ile Arg Met
 10 15 20
 ctt ctg gag ttt act gat acc agc tat gag gag aaa cgg tac atc tgt 210
 Leu Leu Glu Phe Thr Asp Thr Ser Tyr Glu Glu Lys Arg Tyr Ile Cys
 25 30 35
 ggg gaa gct cct gac tat gat aga agc caa tgg ctg gac gtg aaa ttc 258
 Gly Glu Ala Pro Asp Tyr Asp Arg Ser Gln Trp Leu Asp Val Lys Phe
 40 45 50
 aag cta gat ctg gac ttt cct aac ctg ccc tac ctc atg gac ggg aag 306
 Lys Leu Asp Leu Asp Phe Pro Asn Leu Pro Tyr Leu Met Asp Gly Lys
 55 60 65 70
 aac aag atc acc cag agt aac gcc atc ctg aga tac atc gca cgc aag 354
 Asn Lys Ile Thr Gln Ser Asn Ala Ile Leu Arg Tyr Ile Ala Arg Lys
 75 80 85
 cac aac atg tgt ggt gac act gaa gaa gaa aag ata cga gta gac atc 402
 His Asn Met Cys Gly Asp Thr Glu Glu Glu Lys Ile Arg Val Asp Ile
 90 95 100
 atg gag aac cag atc atg gac ttc cgc atg cag ctg gtt cgc ctc tgc 450
 Met Glu Asn Gln Ile Met Asp Phe Arg Met Gln Leu Val Arg Leu Cys
 105 110 115
 tac aat tct aac cac gaa aac ctg aag cct cag tac ttg gaa cag cta 498
 Tyr Asn Ser Asn His Glu Asn Leu Lys Pro Gln Tyr Leu Glu Gln Leu
 120 125 130
 cct gca cag ctg aaa caa ttc tca ttg ttc ctg ggg aaa ttc aca tgg 546
 Pro Ala Gln Leu Lys Gln Phe Ser Leu Phe Leu Gly Lys Phe Thr Trp
 135 140 145 150
 ttt gca gga gaa aag ctg acc ttt gtg gat ttt ctc acc tat gat gtc 594
 Phe Ala Gly Glu Lys Leu Thr Phe Val Asp Phe Leu Thr Tyr Asp Val

155	160	165	
ttg gat cag aac cgt ata ttt gag ccc aag tgt ctg gat gag ttc cca	642		
Leu Asp Gln Asn Arg Ile Phe Glu Pro Lys Cys Leu Asp Glu Phe Pro			
170	175	180	
aac ctg aag gct ttc atg tgc cgt ttt gag gct ttg gag aag att gct	690		
Asn Leu Lys Ala Phe Met Cys Arg Phe Glu Ala Leu Glu Lys Ile Ala			
185	190	195	
gca ttc ctg cag tct gac cgc ttc ttc aag atg cca atc aat aac aag	738		
Ala Phe Leu Gln Ser Asp Arg Phe Phe Lys Met Pro Ile Asn Asn Lys			
200	205	210	
atg gcc aag tgg ggt aac aag tgc tta tgc tga gccagagctc gctgctgctg	791		
Met Ala Lys Trp Gly Asn Lys Cys Leu Cys			
215	220	225	
agccatcttg ccctgagggg cccacactct tagctcactg tcagtcttgt tccatcctgt	851		
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<210> 394

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<213> Mus musculus

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Trp Leu Asp Val Lys Phe Lys Leu Asp Leu Asp Phe Pro Asn Leu Pro

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 Tyr Leu Met Asp Gly Lys Asn Lys Ile Thr Gln Ser Asn Ala Ile Leu
 65 70 75 80
 Arg Tyr Ile Ala Arg Lys His Asn Met Cys Gly Asp Thr Glu Glu Glu
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 Lys Ile Arg Val Asp Ile Met Glu Asn Gln Ile Met Asp Phe Arg Met
 100 105 110
 Gln Leu Val Arg Leu Cys Tyr Asn Ser Asn His Glu Asn Leu Lys Pro
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 Phe Leu Thr Tyr Asp Val Leu Asp Gln Asn Arg Ile Phe Glu Pro Lys
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 Cys Leu Asp Glu Phe Pro Asn Leu Lys Ala Phe Met Cys Arg Phe Glu
 180 185 190
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<210> 395

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Leu Ile Pro Ser Val Val Ile Thr Val Ile Phe Leu Phe Phe Trp Leu
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Phe Met Lys Glu Thr Leu Tyr Asp Glu Val Leu Ala Lys Gln Lys Arg
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Glu Gln Lys Leu Ile Ser Thr Lys Thr Asp Lys Lys Lys Ala Glu Lys
            45             50             55
aag aag aat aaa aag aaa gaa atc cag aat ggg acc ctt cgt gaa tct 244
Lys Lys Asn Lys Lys Lys Glu Ile Gln Asn Gly Thr Leu Arg Glu Ser
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Asp Ser Glu His Val Pro Arg Asp Phe Lys Leu Ser Asp Ala Ser Pro
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gcg gag gat gaa cag ttt gta cct gct cca ctg aat gtg gca gaa act 340
Ala Glu Asp Glu Gln Phe Val Pro Ala Pro Leu Asn Val Ala Glu Thr
            95             100             105
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Ser Ser Ser Val Arg Glu Arg Gln Lys Lys Glu Lys Lys Gln Lys Pro
            110             115             120
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Ser Leu Glu Glu Gln Val Ile Lys Glu Ser Asp Ala Ser Lys Ile Pro

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Pro Pro Leu Glu Ala Ala Ala Leu Lys Lys Lys Ala Gly Gln Lys Lys			
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Ser Lys Asn Gly Ser Glu Glu Gln Asp Lys Lys Val Glu Met Leu Met			
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Gln Glu Gly Gly Leu Gly Lys Lys Lys Gly Leu Ser Lys Lys Gln Lys			
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Thr Tyr Met Pro Leu Asp Asn Ala Asn Ser Asn Leu Met Met Asp Lys			
240	245	250	
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Lys Ser Gly Thr Lys Lys Leu Lys Ile Glu Thr Asp Lys Glu Asn Ala			
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Gln Leu Gln Glu Ala Glu Arg Arg Trp Glu Glu Val Gln Ser Tyr Ile	
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Arg Lys Arg Thr Ala Glu His Glu Ala Ala Gln Gln Asp Leu Gln Ser	
510 515 520	
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Lys Phe Val Ala Lys Glu Asn Glu Val Gln Ser Leu His Ser Lys Leu	
525 530 535	
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Thr Asp Thr Leu Val Ser Lys Gln Gln Leu Glu Gln Arg Leu Met Gln	
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Leu Met Glu Ser Glu Gln Lys Arg Ala Ser Lys Glu Glu Ser Leu Gln	
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Ile Gln Val Gln Asp Ile Leu Glu Gln Asn Glu Ala Leu Lys Ala Gln	
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Ile Gln Gln Phe His Ser Gln Ile Ala Ala Gln Thr Ser Ala Ser Val	

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Leu Ala Glu Glu Leu His Lys Val Ile Ala Glu Lys Asp Lys Gln Leu			
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Lys Gln Thr Glu Asp Ser Leu Ala Asn Glu Gln Asp His Leu Ala Ser			
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Lys Glu Glu Glu Leu Lys Asp Val Gln Asn Met Asn Phe Leu Leu Lys			
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655	660	665	
gca cat gag gtg gag aag atg cag aag agt att cac gta aag gaa gat			2068
Ala His Glu Val Glu Lys Met Gln Lys Ser Ile His Val Lys Glu Asp			
670	675	680	
gaa ata aga ctg ctt gag gag cag ctg cag cac gaa gtt gcc agc aaa			2116
Glu Ile Arg Leu Leu Glu Glu Gln Leu Gln His Glu Val Ala Ser Lys			
685	690	695	
atg gaa gaa ttg aag att ctg agt gag cag aat aaa gca tta cag tcg			2164
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700	705	710	715
gaa gtt cgg aag ctg cag acc gct gtt tct cag cag cct aat aaa gat			2212
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720	725	730	
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Val Val Glu Gln Met Glu Lys Cys Ile Gln Glu Lys Asp Glu Lys Leu			
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 895 900 905

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Gly Thr Ser Asp Ala Glu Ala Val Lys Val Leu Glu His Arg Leu Lys			
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Gln Arg Met Ile Lys Gln Met Gln Ser Ser Phe Thr Ala Ser Glu Arg			
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 Thr Val Thr Gln Leu Gln Gln Leu Leu Gln Glu Val Asn Gln Gln Leu
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 Thr Lys Glu Thr
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 Ser Thr Lys Thr Asp Lys Lys Lys Ala Glu Lys Lys Lys Asn Lys Lys
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 Pro Arg Asp Phe Lys Leu Ser Asp Ala Ser Pro Ala Glu Asp Glu Gln
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 Pro Val Leu Val Thr Lys Gln Pro Ala Pro Pro Pro Pro Leu Glu Ala
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Gln Asp Val Leu Leu Ser His Gln Asp Thr Lys Gln Glu Gly Gly Leu		
195	200	205
Gly Lys Lys Lys Gly Leu Ser Lys Lys Gln Lys Ser Glu Asn Val Ala		
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Val Leu Val Asp Glu Pro Leu Ile His Ala Thr Thr Tyr Met Pro Leu		
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Asp Asn Ala Asn Ser Asn Leu Met Met Asp Lys Arg Glu Ile Ile Asp		
245	250	255
Met Ile Lys Pro Asp His Val Glu Gly Ile Gln Lys Ser Gly Thr Lys		
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Lys Leu Lys Ile Glu Thr Asp Lys Glu Asn Ala Glu Val Lys Phe Lys		
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Asp Phe Leu Leu Ser Leu Lys Thr Met Met Phe Ser Glu Asp Glu Ala		
290	295	300
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Ala Leu Lys Lys Ser Asn Lys Gly Glu Leu Ser Gly Leu Leu His Gln		
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Leu Gln Glu Lys Glu Arg Leu Leu Ser Ala Met Lys Glu Asp Ala Ala		
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Lys Glu Arg Ser Ser Val Val Ile Ala Arg Met Lys Asp Arg Ile Gly		
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Thr Leu Glu Lys Glu His Asn Ile Phe Gln Asn Lys Met His Ala Ser		
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 Gln Met Glu Ala Glu Ile Ala His Leu Lys Gln Glu Asn Gly Ile Leu
 420 425 430
 Arg Asp Ala Val Ser Asn Thr Thr Asn Gln Leu Glu Ser Lys Gln Ser
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 Ala Glu Leu Asn Lys Leu Arg Gln Asp Cys Gly Arg Leu Val Ser Glu
 450 455 460
 Leu Asn Glu Lys Thr Gly Lys Leu Gln Gln Glu Gly Val Gln Lys Lys
 465 470 475 480
 Asn Ala Glu Gln Ala Ala Thr Gln Leu Lys Val Gln Leu Gln Glu Ala
 485 490 495
 Glu Arg Arg Trp Glu Glu Val Gln Ser Tyr Ile Arg Lys Arg Thr Ala
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 Glu His Glu Ala Ala Gln Gln Asp Leu Gln Ser Lys Phe Val Ala Lys
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 Ser Lys Gln Gln Leu Glu Gln Arg Leu Met Gln Leu Met Glu Ser Glu
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 Gln Lys Arg Ala Ser Lys Glu Glu Ser Leu Gln Ile Gln Val Gln Asp
 565 570 575
 Ile Leu Glu Gln Asn Glu Ala Leu Lys Ala Gln Ile Gln Gln Phe His
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 Ser Gln Ile Ala Ala Gln Thr Ser Ala Ser Val Leu Ala Glu Glu Leu
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 His Lys Val Ile Ala Glu Lys Asp Lys Gln Leu Lys Gln Thr Glu Asp
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 Ser Leu Ala Asn Glu Gln Asp His Leu Ala Ser Lys Glu Glu Glu Leu

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 Trp Gln Ala Leu Ala Asn Glu Gln Ala Ala Thr Ala His Glu Val Glu
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 675 680 685
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 690 695 700
 Ile Leu Ser Glu Gln Asn Lys Ala Leu Gln Ser Glu Val Arg Lys Leu
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 Gln Thr Ala Val Ser Gln Gln Pro Asn Lys Asp Val Val Glu Gln Met
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 Glu Lys Cys Ile Gln Glu Lys Asp Glu Lys Leu Arg Thr Val Glu Glu
 740 745 750
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 770 775 780
 Leu Lys Ala Lys Gln Ser Asp Gln Val Ser Phe Val Ser Leu Ile Glu
 785 790 795 800
 Asp Leu Lys Arg Val Ile His Glu Lys Asp Gly Gln Ile Lys Ser Val
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 Glu Glu Leu Leu Glu Val Glu Leu Leu Lys Val Ala Asn Lys Glu Lys
 820 825 830
 Thr Val Gln Ala Leu Lys Gln Glu Ile Glu Val Leu Lys Glu Glu Ile
 835 840 845
 Gly Asn Ala Gln Leu Glu Lys Ala His Gln Leu Ser Val Thr Ser Gln
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1030/2644

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His Thr Leu Leu Gln Leu Glu Cys Glu Lys Tyr Lys Ser Val Leu Ala		
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Glu Thr Glu Gly Ile Leu Gln Lys Leu Gln Arg Ser Val Glu Gln Glu		1120
	1125	1130
Glu Ser Lys Trp Lys Ile Lys Ala Asp Glu Ser Gln Arg Met Ile Lys		1135
	1140	1145
Gln Met Gln Ser Ser Phe Thr Ala Ser Glu Arg Glu Leu Glu Arg Leu		1150
	1155	1160
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	1170	1175
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Met Glu Val Arg Glu Leu Lys Asp Leu Leu Thr Glu Leu Gln Lys Lys		1200
	1205	1210
Leu Asp Asp Ser Tyr Ser Glu Ala Val Arg Gln Asn Glu Glu Leu Asn		1215
	1220	1225
Leu Leu Lys Thr Gln Leu Asn Glu Thr His Ser Lys Leu Gln Asn Glu		1230
	1235	1240
Gln Thr Glu Arg Lys Lys Val Ala Asp Asp Leu His Lys Ala Gln Gln		1245
	1250	1255
Ser Leu Asn Ser Ile His Ser Lys Ile Ser Leu Lys Ala Ala Gly Asp		1260
265	1270	1275
Thr Val Val Ile Glu Asn Ser Asp Ile Ser Pro Glu Met Glu Ser Pro		1280
	1285	1290
Glu Lys Glu Thr Met Ser Val Ser Leu Asn Gln Thr Val Thr Gln Leu		1295
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<211> 2924

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Met Ala Gln Trp Asn Gln Leu Gln Gln

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ctg gac aca cgc tac ctg gag cag ctg cac cag ctg tac agc gac agc 221
 Leu Asp Thr Arg Tyr Leu Glu Gln Leu His Gln Leu Tyr Ser Asp Ser
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 Phe Pro Met Glu Leu Arg Gln Phe Leu Ala Pro Trp Ile Glu Ser Gln
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gac tgg gca tat gca gcc agc aaa gag tca cat gcc acg ttg gtg ttt 317
 Asp Trp Ala Tyr Ala Ala Ser Lys Glu Ser His Ala Thr Leu Val Phe
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cat aat ctc ttg ggt gaa att gac cag caa tat agc cga ttc ctg caa 365
 His Asn Leu Leu Gly Glu Ile Asp Gln Gln Tyr Ser Arg Phe Leu Gln
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gag tcc aat gtc ctc tat cag cac aac ctt cga aga atc aag cag ttt 413

Glu Ser Asn Val Leu Tyr Gln His Asn Leu Arg Arg Ile Lys Gln Phe	
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ctg cag agc agg tat ctt gag aag cca atg gaa att gcc cgg atc gtg	461
Leu Gln Ser Arg Tyr Leu Glu Lys Pro Met Glu Ile Ala Arg Ile Val	
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gcc cga tgc ctg tgg gaa gag tct cgc ctc ctc cag acg gca gcc acg	509
Ala Arg Cys Leu Trp Glu Glu Ser Arg Leu Leu Gln Thr Ala Ala Thr	
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gca gcc cag caa ggg ggc cag gcc aac cac cca aca gcc gcc gta gtg	557
Ala Ala Gln Gln Gly Gly Gln Ala Asn His Pro Thr Ala Ala Val Val	
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aca gag aag cag cag atg ttg gag cag cat ctt cag gat gtc cgg aag	605
Thr Glu Lys Gln Gln Met Leu Glu Gln His Leu Gln Asp Val Arg Lys	
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Arg Val Gln Asp Leu Glu Gln Lys Met Lys Val Val Glu Asn Leu Gln	
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Asp Asp Phe Asp Phe Asn Tyr Lys Thr Leu Lys Ser Gln Gly Asp Met	
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 Leu Lys Ile Lys Val Cys Ile Asp Lys Asp Ser Gly Asp Val Ala Ala
 365 370 375
 ctc aga ggg tct cgg aaa ttt aac att ctg ggc acg aac aca aaa gtg 1325
 Leu Arg Gly Ser Arg Lys Phe Asn Ile Leu Gly Thr Asn Thr Lys Val

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cac ctg acc ctt agg gag cag aga tgt ggg aat gga ggc cgt gcc aat	1421		
His Leu Thr Leu Arg Glu Gln Arg Cys Gly Asn Gly Gly Arg Ala Asn			
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tgt gat gcc tcc ttg atc gtg act gag gag ctg cac ctg atc acc ttc	1469		
Cys Asp Ala Ser Leu Ile Val Thr Glu Glu Leu His Leu Ile Thr Phe			
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Glu Thr Glu Val Tyr His Gln Gly Leu Lys Ile Asp Leu Glu Thr His			
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Ser Leu Pro Val Val Val Ile Ser Asn Ile Cys Gln Met Pro Asn Ala			
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Trp Ala Ser Ile Leu Trp Tyr Asn Met Leu Thr Asn Asn Pro Lys Asn			
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Ile Glu Gln Leu Thr Thr Leu Ala Glu Lys Leu Leu Gly Pro Gly Val			
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Phe Ala Glu Ile Ile Met Gly Tyr Lys Ile Met Asp Ala Thr Asn Ile	
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 Phe Leu Ala Pro Trp Ile Glu Ser Gln Asp Trp Ala Tyr Ala Ala Ser
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 Lys Glu Ser His Ala Thr Leu Val Phe His Asn Leu Leu Gly Glu Ile
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 Asp Gln Gln Tyr Ser Arg Phe Leu Gln Glu Ser Asn Val Leu Tyr Gln
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 His Asn Leu Arg Arg Ile Lys Gln Phe Leu Gln Ser Arg Tyr Leu Glu
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 Lys Pro Met Glu Ile Ala Arg Ile Val Ala Arg Cys Leu Trp Glu Glu
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 Ser Arg Leu Leu Gln Thr Ala Ala Thr Ala Ala Gln Gln Gly Gly Gln
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 145 150 155 160
 Lys Met Lys Val Val Glu Asn Leu Gln Asp Asp Phe Asp Phe Asn Tyr
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 Lys Thr Leu Lys Ser Gln Gly Asp Met Gln Asp Leu Asn Gly Asn Asn
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 Gln Ser Val Thr Arg Gln Lys Met Gln Gln Leu Glu Gln Met Leu Thr
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 Ala Leu Asp Gln Met Arg Arg Ser Ile Val Ser Glu Leu Ala Gly Leu
 210 215 220

Leu Ser Ala Met Glu Tyr Val Gln Lys Thr Leu Thr Asp Glu Glu Leu
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 Gly Leu Lys Ile Asp Leu Glu Thr His Ser Leu Pro Val Val Val Ile

450 455 460
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 Phe Trp Val Trp Leu Asp Asn Ile Ile Asp Leu Val Lys Lys Tyr Ile
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 595 600 605
 Arg Phe Ser Glu Ser Ser Lys Glu Gly Gly Val Thr Phe Thr Trp Val
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 Thr Lys Gln Gln Leu Asn Asn Met Ser Phe Ala Glu Ile Ile Met Gly
 645 650 655
 Tyr Lys Ile Met Asp Ala Thr Asn Ile Leu Val Ser Pro Leu Val Tyr
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Pro Glu Ser Gln Glu His Pro Glu Ala Asp Pro Gly Ala Ala Pro Tyr
690 695 700
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Ile Asp Leu Pro Met Ser Pro Arg Thr Leu Asp Ser Leu Met Gln Phe
725 730 735
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gaccacggga aggttgaagg ataatcttct aataccagca ctttgaatga gatttgittc 180
tctgccacaa actgattttt tttttttaaa aaattttatt tictggtgga ggagttgaaa 240
caaagctaac ttttgtggct tcgcagct atg cag ctt gaa atc caa gta gca 292

Met Gln Leu Glu Ile Gln Val Ala

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 Val Asn Ile Phe Gly Glu Glu Leu Glu Arg Leu Leu Lys Lys Lys Tyr
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 gaa ggg cac tgg tat cct gaa aag cca tac aaa ggc tca ggg ttt aga 436
 Glu Gly His Trp Tyr Pro Glu Lys Pro Tyr Lys Gly Ser Gly Phe Arg
 45 50 55
 tgt ata cac gtg ggg gag aag gta gac ccc gtg atc gag cag gca tcc 484
 Cys Ile His Val Gly Glu Lys Val Asp Pro Val Ile Glu Gln Ala Ser
 60 65 70
 aaa gag agt ggt ttg gac att gac gat gtt cgt ggc aat ctg cca cag 532
 Lys Glu Ser Gly Leu Asp Ile Asp Asp Val Arg Gly Asn Leu Pro Gln
 75 80 85
 gat ttg agt gtc tgg atc gac ccg ttt gag gtt tcc tac cag atc ggc 580
 Asp Leu Ser Val Trp Ile Asp Pro Phe Glu Val Ser Tyr Gln Ile Gly
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 Glu Lys Gly Pro Val Lys Val Leu Tyr Val Asp Asp Ser Ser Glu Thr
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 gga tgt gag ctg gat aag gag atc aaa aac agc ttt aac ccg gag ccc 676
 Gly Cys Glu Leu Asp Lys Glu Ile Lys Asn Ser Phe Asn Pro Glu Pro
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 Gln Val Phe Met Pro Ile Ser Asp Pro Ala Ser Ser Val Ser Ser Ser
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gta gct cgc act tct ccg atc aac ctg ggc ctg act gta aat gtg aac 916
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              205              210              215
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His Leu Leu Lys Gln Lys Ala Ile Ser Ser Ser Val His Ser Leu Tyr

              220              225              230
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Gln Gln Gln Gln Gln Pro Ser Ser Ser Gln Pro Pro Pro Pro Leu Pro

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Gln Thr Ser Ala Leu Ser Pro Asn Ala Lys Glu Phe Ile Phe Pro Asn

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 Met Ala Asn
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Glu Arg Leu Leu Lys Lys Lys Tyr Glu Gly His Trp Tyr Pro Glu Lys

35 40 45

Pro Tyr Lys Gly Ser Gly Phe Arg Cys Ile His Val Gly Glu Lys Val

50 55 60

Asp Pro Val Ile Glu Gln Ala Ser Lys Glu Ser Gly Leu Asp Ile Asp

65 70 75 80

Asp Val Arg Gly Asn Leu Pro Gln Asp Leu Ser Val Trp Ile Asp Pro

85 90 95

Phe Glu Val Ser Tyr Gln Ile Gly Glu Lys Gly Pro Val Lys Val Leu

100 105 110

Tyr Val Asp Asp Ser Ser Glu Thr Gly Cys Glu Leu Asp Lys Glu Ile

115 120 125

Lys Asn Ser Phe Asn Pro Glu Pro Gln Val Phe Met Pro Ile Ser Asp

130 135 140

Pro Ala Ser Ser Val Ser Ser Ser Pro Ser Pro Pro Phe Gly His Ser

145 150 155 160

Ala Ala Val Ser Pro Thr Phe Met Pro Arg Ser Thr Gln Pro Leu Thr

165 170 175

Phe Thr Thr Ala Thr Phe Ala Ala Thr Lys Phe Gly Ser Thr Lys Met

180 185 190

Lys Asn Ser Gly Arg Ser Ser Lys Val Ala Arg Thr Ser Pro Ile Asn

195 200 205
 Leu Gly Leu Thr Val Asn Val Asn His Leu Leu Lys Gln Lys Ala Ile
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 Ser Ser Ser Val His Ser Leu Tyr Gly Leu Gly Leu Gly Ser Gln Gln
 225 230 235 240
 Gln Pro Gln Pro Gln Pro Gln Gln Gln Gln Gln Gln Gln Pro Ser Ser
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 Ser Gln Pro Pro Pro Pro Leu Pro Gln Gln Gln Gln Gln Gln Pro Gln
 260 265 270
 Gln Gln Gln Gln Gln Gln Gln Gln Gln Thr Ser Ala Leu Ser Pro Asn
 275 280 285
 Ala Lys Glu Phe Ile Phe Pro Asn Met Gln Gly Gln Gly Ser Ser Thr
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 Tyr Ser Asn Ala Phe Asp Val Phe Ala Ala Tyr Gly Gly Leu Asn Glu
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<211> 273

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<213> Mus musculus

<400> 401

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<222> (112).. (1710)

<400> 402

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Met Lys

1

ctt gct gac agc gta atg gca ggg aaa gct tcc gac ggc tcc atc aaa 165

Leu Ala Asp Ser Val Met Ala Gly Lys Ala Ser Asp Gly Ser Ile Lys

5

10

15

tgg cag ctt tgc tac gac atc tgc gcc aga act tgg tgg atg gat gag 213

Trp Gln Leu Cys Tyr Asp Ile Ser Ala Arg Thr Trp Trp Met Asp Glu

20

25

30

ttt cat cct ttc att gaa gca ctt ctg ccc cat gtc cgc gcc ttc gcc 261

Phe His Pro Phe Ile Glu Ala Leu Leu Pro His Val Arg Ala Phe Ala

35

40

45

50

tac aca tgg ttc aac ctg cag gcc cga aag cgg aaa tac ttc aaa aaa 309

Tyr Thr Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys
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 cat gag aag cgc atg tcg aaa gaa gag gag agg gcc gtg aag gat gaa 357
 His Glu Lys Arg Met Ser Lys Glu Glu Glu Arg Ala Val Lys Asp Glu
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 Leu Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Tyr Arg Glu Asp Phe
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 Val Leu Thr Val Thr Gly Lys Lys Pro Pro Cys Cys Val Leu Ser Asn
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 cct gat cag aaa ggc aag atg cgg aga att gac tgc ctc cgc cag gca 549
 Pro Asp Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu Arg Gln Ala
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 Asp Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly
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 Cys Ser Asn Pro Gly Leu Cys Val Gln Pro His His Ile Gly Val Ser
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 Val Lys Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val His Ala Ala Asp
 195 200 205 210

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Ser Ser Gln Ser Glu Ser Pro Ser Gln Pro Ser Glu Ala Asp Ile Lys	
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Asp Gln Pro Glu Asn Gly His Leu Gly Phe Gln Asp Ser Phe Val Thr	
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Ser Gly Val Phe Ser Val Thr Glu Leu Val Arg Val Ser Gln Thr Pro	
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Ile Ala Ala Gly Thr Gly Pro Asn Phe Ser Leu Ser Asp Leu Glu Ser	
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Ser Ser Tyr Tyr Ser Met Ser Pro Gly Ala Met Arg Arg Ser Leu Pro	
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Glu Met Asp Ser Pro Gly Glu Glu Pro Phe Tyr Thr Gly Gln Gly Arg	
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Ser Pro Gly Ser Gly Ser Gln Ser Ser Gly Trp His Glu Val Glu Pro	
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Gly Leu Pro Ser Pro Ser Thr Leu Lys Lys Ser Glu Lys Ser Gly Phe	
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Ser Ser Pro Ser Pro Ser Gln Thr Ser Ser Leu Gly Thr Ala Phe Thr	

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Gln His His Arg Pro Val Ile Thr Gly Pro Arg Ala Ser Pro His Ala				
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acg cca tcg act ctc cac ttt cca acg tca ccc atc atc cag cag cct				1317
Thr Pro Ser Thr Leu His Phe Pro Thr Ser Pro Ile Ile Gln Gln Pro				
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Gly Pro Tyr Phe Ser His Pro Ala Ile Arg Tyr His Pro Gln Glu Thr				
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Leu Lys Glu Phe Val Gln Leu Val Cys Pro Asp Ala Gly Gln Gln Ala				
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gga cag gtg ggg ttc ctc aat ccc aat gga agc agt caa ggc aag gtg				1461
Gly Gln Val Gly Phe Leu Asn Pro Asn Gly Ser Ser Gln Gly Lys Val				
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cac aac cca ttc ctc ccc acc cca atg ttg ccg ccg ccg cca cca cca				1509
His Asn Pro Phe Leu Pro Thr Pro Met Leu Pro Pro Pro Pro Pro Pro				
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ccg atg gcc agg cct gtg cct ctg ccc atg cca gac acc aag cct cca				1557
Pro Met Ala Arg Pro Val Pro Leu Pro Met Pro Asp Thr Lys Pro Pro				
	470	475	480	
acc aca tca aca gaa gga ggt gca gcc tcc ccc acc tca ccg acc tac				1605
Thr Thr Ser Thr Glu Gly Gly Ala Ala Ser Pro Thr Ser Pro Thr Tyr				
	485	490	495	
tcg aca ccc agc acc tcc ccc gca aac cga ttc gtc agt gtt gga cca				1653
Ser Thr Pro Ser Thr Ser Pro Ala Asn Arg Phe Val Ser Val Gly Pro				
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cgg gat cca agc ttt gta aat atc cct caa cag aca cag tcc tgg tac				1701

Arg Asp Pro Ser Phe Val Asn Ile Pro Gln Gln Thr Gln Ser Trp Tyr

515

520

525

530

ctg gga taa aagtgcagc atcccacat cctccagaca gaccacctga 1750

Leu Gly

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<211> 532

<212> PRT

<213> Mus musculus

<400> 403

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 35 40 45
 Phe Ala Tyr Thr Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe
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 Lys Lys His Glu Lys Arg Met Ser Lys Glu Glu Glu Arg Ala Val Lys
 65 70 75 80
 Asp Glu Leu Leu Ser Glu Lys Pro Glu Val Lys Gln Lys Trp Ala Ser
 85 90 95
 Arg Leu Leu Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Tyr Arg Glu
 100 105 110
 Asp Phe Val Leu Thr Val Thr Gly Lys Lys Pro Pro Cys Cys Val Leu
 115 120 125
 Ser Asn Pro Asp Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu Arg
 130 135 140
 Gln Ala Asp Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe
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 Lys Gly Ile Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys Ser

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	195		200		205										
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Ile	Lys	Asp	Gln	Pro	Glu	Asn	Gly	His	Leu	Gly	Phe	Gln	Asp	Ser	Phe
	225		230		235										
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	245		250		255										
Thr	Pro	Ile	Ala	Ala	Gly	Thr	Gly	Pro	Asn	Phe	Ser	Leu	Ser	Asp	Leu
	260		265		270										
Glu	Ser	Ser	Ser	Tyr	Tyr	Ser	Met	Ser	Pro	Gly	Ala	Met	Arg	Arg	Ser
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Leu	Pro	Ser	Thr	Ser	Ser	Thr	Ser	Ser	Thr	Lys	Arg	Leu	Lys	Ser	Val
	290		295		300										
Glu	Asp	Glu	Met	Asp	Ser	Pro	Gly	Glu	Glu	Pro	Phe	Tyr	Thr	Gly	Gln
	305		310		315										
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Glu	Pro	Gly	Leu	Pro	Ser	Pro	Ser	Thr	Leu	Lys	Lys	Ser	Glu	Lys	Ser
	340		345		350										
Gly	Phe	Ser	Ser	Pro	Ser	Pro	Ser	Gln	Thr	Ser	Ser	Leu	Gly	Thr	Ala
	355		360		365										
Phe	Thr	Gln	His	His	Arg	Pro	Val	Ile	Thr	Gly	Pro	Arg	Ala	Ser	Pro
	370		375		380										
His	Ala	Thr	Pro	Ser	Thr	Leu	His	Phe	Pro	Thr	Ser	Pro	Ile	Ile	Gln
	385		390		395										

Gln Pro Gly Pro Tyr Phe Ser His Pro Ala Ile Arg Tyr His Pro Gln
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 Glu Thr Leu Lys Glu Phe Val Gln Leu Val Cys Pro Asp Ala Gly Gln
 420 425 430
 Gln Ala Gly Gln Val Gly Phe Leu Asn Pro Asn Gly Ser Ser Gln Gly
 435 440 445
 Lys Val His Asn Pro Phe Leu Pro Thr Pro Met Leu Pro Pro Pro Pro
 450 455 460
 Pro Pro Pro Met Ala Arg Pro Val Pro Leu Pro Met Pro Asp Thr Lys
 465 470 475 480
 Pro Pro Thr Thr Ser Thr Glu Gly Gly Ala Ala Ser Pro Thr Ser Pro
 485 490 495
 Thr Tyr Ser Thr Pro Ser Thr Ser Pro Ala Asn Arg Phe Val Ser Val
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<213> Mus musculus

<220>

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<222> (387).. (830)

<400> 404

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Met Ala Leu Lys Arg Ile His Lys Glu

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 Asp Ser Pro Tyr Gln Gly Gly Val Phe Phe Leu Thr Ile His Phe Pro
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 Thr Asp Tyr Pro Phe Lys Pro Pro Lys Val Ala Phe Thr Thr Arg Ile
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 Arg Ser Gln Trp Ser Pro Ala Leu Thr Ile Ser Lys Val Leu Leu Ser
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 Ile Cys Ser Leu Leu Cys Asp Pro Asn Pro Asp Asp Pro Leu Val Pro

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Glu Ile Ala Arg Ile Tyr Lys Thr Asp Arg Glu Lys Tyr Asn Arg Ile			
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Ala Arg Glu Trp Thr Gln Lys Tyr Ala Met			
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<211> 147

<212> PRT

<213> Mus musculus

<400> 405

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Val	Phe	Phe	Leu	Thr	Ile	His	Phe	Pro	Thr	Asp	Tyr	Pro	Phe	Lys	Pro
Pro	Lys	Val	Ala	Phe	Thr	Thr	Arg	Ile	Tyr	His	Pro	Asn	Ile	Asn	Ser
Asn	Gly	Ser	Ile	Cys	Leu	Asp	Ile	Leu	Arg	Ser	Gln	Trp	Ser	Pro	Ala
Leu	Thr	Ile	Ser	Lys	Val	Leu	Leu	Ser	Ile	Cys	Ser	Leu	Leu	Cys	Asp
Pro	Asn	Pro	Asp	Asp	Pro	Leu	Val	Pro	Glu	Ile	Ala	Arg	Ile	Tyr	Lys
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Tyr Ala Met

145

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<211> 3577

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<213> Mus musculus

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<400> 407

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Val Glu Ser Ala

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His Lys Cys Ile Lys Thr Leu Gly Glu Lys Lys Lys Arg Val Gln Leu			
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Lys Asp Met Gly Glu Asp Leu Glu Cys Leu Cys Gln Ile Met Arg Thr			
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Val Gly Pro Arg Leu Asp His Glu Arg Ala Lys Ser Leu Met Asp Gln			
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Tyr Phe Ala Arg Met Cys Ser Leu Met Leu Ser Lys Glu Leu Pro Ala			
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Arg Ile Arg Phe Leu Leu Gln Asp Thr Val Glu Leu Arg Glu His His			
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<213> Mus musculus

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 Val Pro Thr Val Phe Glu Asn Tyr Val Ala Asp Ile Glu Val Asp Gly
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Trp Val Pro Glu Val Lys His Phe Cys Pro Asn Val Pro Ile Ile Leu
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Thr Lys Glu Gly Val Arg Glu Val Phe Glu Thr Ala Thr Arg Ala Ala
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<210> 411

<211> 196

<212> PRT

<213> Mus musculus

<400> 411

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 Asp Gly Lys Gln Val Glu Leu Ala Leu Trp Asp Thr Ala Gly Gln Glu
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 Asp Tyr Asp Arg Leu Arg Pro Leu Ser Tyr Pro Asp Thr Asp Val Ile
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 Glu Lys Trp Val Pro Glu Val Lys His Phe Cys Pro Asn Val Pro Ile
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 Ile Leu Val Ala Asn Lys Lys Asp Leu Arg Ser Asp Glu His Val Arg
 115 120 125
 Thr Glu Leu Ala Arg Met Lys Gln Glu Pro Val Arg Thr Asp Asp Gly
 130 135 140
 Arg Ala Met Ala Val Arg Ile Gln Ala Tyr Asp Tyr Leu Glu Cys Ser
 145 150 155 160
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<222> (389).. (1594)

<400> 412

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Met Gln Val Ser Ile Ala Cys Thr

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5

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Glu His Asn Leu Lys Ser Arg Asn Gly Glu Asp Arg Leu Leu Ser Lys

10

15

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Gln Ser Ser Thr Ala Pro Asn Val Val Asn Ala Ala Arg Ala Lys Phe

25

30

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Tyr Arg Asn Leu Gly Lys Ser Gly Leu Arg Val Ser Cys Leu Gly Leu	
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Ile Lys Lys Lys Gly Trp Arg Arg Ser Ser Leu Val Ile Thr Thr Lys	
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Leu Tyr Trp Gly Gly Lys Ala Glu Thr Glu Arg Gly Leu Ser Arg Lys	
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His Ile Ile Glu Gly Leu Asn Gly Ser Leu Gln Arg Leu Gln Leu Glu	
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Tyr Val Asp Val Val Phe Ala Asn Arg Pro Asp Ser Asn Thr Pro Met	

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Met Tyr Trp Gly Thr Ser Arg Trp Ser Ala Met Glu Ile Met Glu Ala				
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Tyr Ser Val Ala Arg Gln Phe Asn Met Ile Pro Pro Val Cys Glu Gln				
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Glu Leu Tyr His Lys Ile Gly Val Gly Ala Met Thr Trp Ser Pro Leu				
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Ile Ala Glu Arg Leu Gly Cys Thr Leu Pro Gln Leu Ala Val Ala Trp				
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<211> 401

<212> PRT

<213> Mus musculus

<400> 413

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Val	Asn	Ala	Ala	Arg	Ala	Lys	Phe	Arg	Thr	Val	Ala	Ile	Ile	Ala	Arg
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Leu	Arg	Val	Ser	Cys	Leu	Gly	Leu	Gly	Thr	Trp	Val	Thr	Phe	Gly	Gly
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 Ser Leu Gln Arg Leu Gln Leu Glu Tyr Val Asp Val Val Phe Ala Asn
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 His Val Ile Asn Gln Gly Met Ala Met Tyr Trp Gly Thr Ser Arg Trp
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 Glu Lys Val Glu Val Gln Leu Pro Glu Leu Tyr His Lys Ile Gly Val
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<211> 1251

<212> DNA

<213> Mus musculus

<220>

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<222> (1).. (1251)

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 Ile Asp Pro Glu Glu Thr Val Lys Ala Leu Lys Glu Lys Ile Glu Ser
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Asp Glu Lys Asn Phe Val Val Val Met Val Thr Lys Pro Lys Ala Val			
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Pro Thr Pro Ala Leu Ala Pro Thr Ser Thr Pro Ala Ser Thr Thr Pro			
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gta aca cct cag gag aaa gaa gct ata gaa cgg tta aag gca tta gga 1152
Val Thr Pro Gln Glu Lys Glu Ala Ile Glu Arg Leu Lys Ala Leu Gly
      370              375              380
ttt cct gaa gga ctt gtg att caa gca tat ttt gct tgt gag aag aat 1200
Phe Pro Glu Gly Leu Val Ile Gln Ala Tyr Phe Ala Cys Glu Lys Asn
385              390              395              400
gag aat ctg gct gcc aac ttt ctt cta cag cag aac ttt gat gaa gac 1248
Glu Asn Leu Ala Ala Asn Phe Leu Leu Gln Gln Asn Phe Asp Glu Asp
      405              410              415
tga
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<210> 415

<211> 416

<212> PRT

<213> Mus musculus

<400> 415

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Met Gln Val Thr Leu Lys Thr Leu Gln Gln Gln Thr Phe Lys Ile Asp
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Ile Asp Pro Glu Glu Thr Val Lys Ala Leu Lys Glu Lys Ile Glu Ser
      20              25              30
Glu Lys Gly Lys Asp Ala Phe Pro Val Ala Gly Gln Lys Leu Ile Tyr
      35              40              45
Ala Gly Lys Ile Leu Ser Asp Asp Thr Ala Leu Lys Glu Tyr Lys Ile
      50              55              60

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Asp Glu Lys Asn Phe Val Val Val Met Val Thr Lys Pro Lys Ala Val
 65 70 75 80
 Thr Thr Ala Val Pro Ala Thr Thr Gln Pro Ser Ser Thr Pro Ser Pro
 85 90 95
 Thr Thr Val Ser Ser Ser Pro Ala Val Ala Ala Ala Gln Ala Pro Ala
 100 105 110
 Pro Thr Pro Ala Leu Ala Pro Thr Ser Thr Pro Ala Ser Thr Thr Pro
 115 120 125
 Ala Ser Thr Thr Ala Ser Ser Glu Pro Ala Pro Ala Gly Ala Thr Gln
 130 135 140
 Pro Glu Lys Pro Ala Glu Lys Pro Ala Gln Thr Pro Val Leu Thr Ser
 145 150 155 160
 Pro Ala Pro Ala Asp Ser Thr Pro Gly Asp Ser Ser Arg Ser Asn Leu
 165 170 175
 Phe Glu Asp Ala Thr Ser Ala Leu Val Thr Gly Gln Ser Tyr Glu Asn
 180 185 190
 Met Val Thr Glu Ile Met Ser Met Gly Tyr Glu Arg Glu Gln Val Ile
 195 200 205
 Ala Ala Leu Arg Ala Ser Phe Asn Asn Pro Asp Arg Ala Val Glu Tyr
 210 215 220
 Leu Leu Met Gly Ile Pro Gly Asp Arg Glu Ser Gln Ala Val Val Asp
 225 230 235 240
 Pro Pro Pro Gln Ala Val Ser Thr Gly Thr Pro Gln Ser Pro Ala Val
 245 250 255
 Ala Ala Ala Ala Ala Thr Thr Thr Ala Thr Thr Thr Thr Thr Ser Gly
 260 265 270
 Gly His Pro Leu Glu Phe Leu Arg Asn Gln Pro Gln Phe Gln Gln Met
 275 280 285
 Arg Gln Ile Ile Gln Gln Asn Pro Ser Leu Leu Pro Ala Leu Leu Gln

290 295 300
 Gln Ile Gly Arg Glu Asn Pro Gln Leu Leu Gln Gln Ile Ser Gln His
 305 310 315 320
 Gln Glu His Phe Ile Gln Met Leu Asn Glu Pro Val Gln Glu Ala Gly
 325 330 335
 Gly Gln Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
 340 345 350
 Gly Gly Gly Ile Ala Glu Ala Gly Ser Gly His Met Asn Tyr Ile Gln
 355 360 365
 Val Thr Pro Gln Glu Lys Glu Ala Ile Glu Arg Leu Lys Ala Leu Gly
 370 375 380
 Phe Pro Glu Gly Leu Val Ile Gln Ala Tyr Phe Ala Cys Glu Lys Asn
 385 390 395 400
 Glu Asn Leu Ala Ala Asn Phe Leu Leu Gln Gln Asn Phe Asp Glu Asp
 405 410 415

<210> 416

<211> 342

<212> DNA

<213> Mus musculus

<400> 416

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 atcctgcttg ggaaccagc aaggaagatc atggaatttt tticattacg ataattatat 180
 aaggacatgt ttggtagtaa ctaggaactt ctgagccctg gtgaatggc ttagaacagt 240
 cctggctgat acttctgtaa gcctaccac agagtatctt tcagagatca cgaattttgg 300
 ggtacactca catgggaatt ctgcaaact tgcccagtga aa 342

<210> 417

<211> 2052

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (146).. (1012)

<400> 417

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gtagcgggtga cagcgacccg gagtc atg agc gac agc ggc gag cag aac tac 172
                Met Ser Asp Ser Gly Glu Gln Asn Tyr
                    1                 5
ggc gag cgg gaa tcc cgt tct gct tcc cga agt gga agt gct cac gga 220
Gly Glu Arg Glu Ser Arg Ser Ala Ser Arg Ser Gly Ser Ala His Gly
    10                15                20                25
tcg ggg aaa tct gca cgg cat aca cct gca agg tct cgc tcc aag gaa 268
Ser Gly Lys Ser Ala Arg His Thr Pro Ala Arg Ser Arg Ser Lys Glu
                30                35                40
gac tca agg cgt tct aga tca aag tcc agg tcc agg tct gaa tct agg 316
Asp Ser Arg Arg Ser Arg Ser Lys Ser Arg Ser Arg Ser Glu Ser Arg
                45                50                55
tct aga tcc aga aga agt tct aga agg cat tat aca agg tca cga tca 364
Ser Arg Ser Arg Arg Ser Ser Arg Arg His Tyr Thr Arg Ser Arg Ser
                60                65                70
cga tct cgc tcg cat aga cga tcc cgg agc agg tct tac agc cga gat 412
Arg Ser Arg Ser His Arg Arg Ser Arg Ser Arg Ser Tyr Ser Arg Asp

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75	80	85	
tat cgc agg cgc cac agc cac agc cat tct ccc atg tct act cga agg	460		
Tyr Arg Arg Arg His Ser His Ser His Ser Pro Met Ser Thr Arg Arg			
90	95	100	105
cgt cat gtt ggg aac cgg gca aat cct gac ccc aac tgt tgt ctt ggc	508		
Arg His Val Gly Asn Arg Ala Asn Pro Asp Pro Asn Cys Cys Leu Gly			
110	115	120	
gtg ttt ggg ttg agc tta tac acc aca gaa aga gac cta aga gaa gtg	556		
Val Phe Gly Leu Ser Leu Tyr Thr Thr Glu Arg Asp Leu Arg Glu Val			
125	130	135	
ttc tct aaa tat ggc ccc att gct gat gtg tct att gta tat gac cag	604		
Phe Ser Lys Tyr Gly Pro Ile Ala Asp Val Ser Ile Val Tyr Asp Gln			
140	145	150	
caa tct aga cgt tca aga gga ttt gcc ttt gta tat ttt gaa aat gta	652		
Gln Ser Arg Arg Ser Arg Gly Phe Ala Phe Val Tyr Phe Glu Asn Val			
155	160	165	
gac gat gcc aag gaa gct aaa gaa cgt gcc aat gga atg gag ctt gat	700		
Asp Asp Ala Lys Glu Ala Lys Glu Arg Ala Asn Gly Met Glu Leu Asp			
170	175	180	185
ggg cgt cga att aga gtc gat ttc tct ata aca aaa agg ccc cat acc	748		
Gly Arg Arg Ile Arg Val Asp Phe Ser Ile Thr Lys Arg Pro His Thr			
190	195	200	
cca aca cca gga att tat atg ggg aga ccc act tat ggc agt tct cgc	796		
Pro Thr Pro Gly Ile Tyr Met Gly Arg Pro Thr Tyr Gly Ser Ser Arg			
205	210	215	
cgc cga gac tat tat gac aga ggg tac gat cgg ggt tat gat gac cgg	844		
Arg Arg Asp Tyr Tyr Asp Arg Gly Tyr Asp Arg Gly Tyr Asp Asp Arg			
220	225	230	
gac tat tac agc aga tca tac aga gga gga ggt ggt gga gga ggt gga	892		

Asp Tyr Tyr Ser Arg Ser Tyr Arg Gly Gly Gly Gly Gly Gly Gly Gly
 235 240 245
 tgg aga gca gct caa gac agg gat cag att tac aga aga cgg tca cct 940
 Trp Arg Ala Ala Gln Asp Arg Asp Gln Ile Tyr Arg Arg Arg Ser Pro
 250 255 260 265
 tct cct tac tac agt cgt gga gga tac agg tca cgt tct cga tca cga 988
 Ser Pro Tyr Tyr Ser Arg Gly Gly Tyr Arg Ser Arg Ser Arg Ser Arg
 270 275 280
 tcc tac tca cct cgt cgc tac taa agcatgaagt tgaagacttt ctgaaacctg 1042
 Ser Tyr Ser Pro Arg Arg Tyr
 285
 ccatagagct gggatatgt ttgtggacaa tattttctat tgtctcctgt ttaaaaagtg 1102
 aacagtgcct agtgaagtta ggtgactttt acacctttta tgaatgactac ttttgggtgga 1162
 gttgaaatgc tgttttcatt ctgcatttgt gtagttcggg gctttgttca aagttaagtg 1222
 ttttcagaaa agtaigtgtt gcatgtattt ttttacagtc caaattttga ctgctgagaa 1282
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 gatcgaagcc tgtgtgtaaa atgctaccag atggcaaaaa gcaacaataa acaagtttga 1402
 tttttacttt tctttctaaa tatcaatgct taaccagaac cattgttagt tatcagtaaa 1462
 aaagtaaaaa gttaaataaa tgtctttcag gagtccatga aacttgccat attcaatata 1522
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 ttgagaactg ttttaataaag gcaagaaaaa ttgctgatca acttgttttt acaagaagt 2002
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<210> 418

<211> 288

<212> PRT

<213> Mus musculus

<400> 418

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 35 40 45
 Lys Ser Arg Ser Arg Ser Glu Ser Arg Ser Arg Ser Arg Arg Ser Ser
 50 55 60
 Arg Arg His Tyr Thr Arg Ser Arg Ser Arg Ser Arg Ser His Arg Arg
 65 70 75 80
 Ser Arg Ser Arg Ser Tyr Ser Arg Asp Tyr Arg Arg Arg His Ser His
 85 90 95
 Ser His Ser Pro Met Ser Thr Arg Arg Arg His Val Gly Asn Arg Ala
 100 105 110
 Asn Pro Asp Pro Asn Cys Cys Leu Gly Val Phe Gly Leu Ser Leu Tyr
 115 120 125
 Thr Thr Glu Arg Asp Leu Arg Glu Val Phe Ser Lys Tyr Gly Pro Ile
 130 135 140
 Ala Asp Val Ser Ile Val Tyr Asp Gln Gln Ser Arg Arg Ser Arg Gly
 145 150 155 160
 Phe Ala Phe Val Tyr Phe Glu Asn Val Asp Asp Ala Lys Glu Ala Lys
 165 170 175
 Glu Arg Ala Asn Gly Met Glu Leu Asp Gly Arg Arg Ile Arg Val Asp

180 185 190
 Phe Ser Ile Thr Lys Arg Pro His Thr Pro Thr Pro Gly Ile Tyr Met
 195 200 205
 Gly Arg Pro Thr Tyr Gly Ser Ser Arg Arg Arg Asp Tyr Tyr Asp Arg
 210 215 220
 Gly Tyr Asp Arg Gly Tyr Asp Asp Arg Asp Tyr Tyr Ser Arg Ser Tyr
 225 230 235 240
 Arg Gly Gly Gly Gly Gly Gly Gly Gly Trp Arg Ala Ala Gln Asp Arg
 245 250 255
 Asp Gln Ile Tyr Arg Arg Arg Ser Pro Ser Pro Tyr Tyr Ser Arg Gly
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 Gly Tyr Arg Ser Arg Ser Arg Ser Arg Ser Tyr Ser Pro Arg Arg Tyr
 275 280 285

<210> 419

<211> 2681

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (112).. (1887)

<400> 419

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 Met Lys

1

tac att ctg gtt act ggt ggt gtt ata tca gga att gga aaa gga gtc 165

Tyr Ile Leu Val Thr Gly Gly Val Ile Ser Gly Ile Gly Lys Gly Val
 5 10 15
 atc gcc agc agt gtg ggc aca ata ctt aaa tca tgt ggc tta cat gta 213
 Ile Ala Ser Ser Val Gly Thr Ile Leu Lys Ser Cys Gly Leu His Val
 20 25 30
 aca tca ttt aag att gac ccc tat att aac att gat gca gga aca ttc 261
 Thr Ser Phe Lys Ile Asp Pro Tyr Ile Asn Ile Asp Ala Gly Thr Phe
 35 40 45 50
 tct cct tat gaa cat gga gaa gtc ttt gtg ctg gat gat ggt gga gaa 309
 Ser Pro Tyr Glu His Gly Glu Val Phe Val Leu Asp Asp Gly Gly Glu
 55 60 65
 gtt gac ctt gac ttg gga aat tat gag cga ttc ctt gat atc cgt ctc 357
 Val Asp Leu Asp Leu Gly Asn Tyr Glu Arg Phe Leu Asp Ile Arg Leu
 70 75 80
 acc aag gac aat aat ctg acc aca ggg aag ata tac cag tac gtc att 405
 Thr Lys Asp Asn Asn Leu Thr Thr Gly Lys Ile Tyr Gln Tyr Val Ile
 85 90 95
 aac aag gag cgc aaa ggg gat tac tta ggg aag act gtc cag gtt gtc 453
 Asn Lys Glu Arg Lys Gly Asp Tyr Leu Gly Lys Thr Val Gln Val Val
 100 105 110
 cct cac atc act gat gca atc caa gag tgg gtg atg aga cag gca tta 501
 Pro His Ile Thr Asp Ala Ile Gln Glu Trp Val Met Arg Gln Ala Leu
 115 120 125 130
 ata ccc gta gac gaa gat ggc tta gaa cct caa gtg tgt gtt att gag 549
 Ile Pro Val Asp Glu Asp Gly Leu Glu Pro Gln Val Cys Val Ile Glu
 135 140 145
 ctt ggt ggc aca gtg gga gac att gaa agc atg ccc ttc att gag gcc 597
 Leu Gly Gly Thr Val Gly Asp Ile Glu Ser Met Pro Phe Ile Glu Ala
 150 155 160

ttc cgc cag ttc cag ttc aag gtc aag agg gaa aac ttt tgt aat atc	645
Phe Arg Gln Phe Gln Phe Lys Val Lys Arg Glu Asn Phe Cys Asn Ile	
165 170 175	
cat gtc agt ctg gtt cct cag cca agt tca aca ggg gaa cag aag aca	693
His Val Ser Leu Val Pro Gln Pro Ser Ser Thr Gly Glu Gln Lys Thr	
180 185 190	
aaa ccc acc cag aac agt gtt cgg gaa ctt aga gga ctc ggg ctt tct	741
Lys Pro Thr Gln Asn Ser Val Arg Glu Leu Arg Gly Leu Gly Leu Ser	
195 200 205 210	
cca gac tta gtg gtg tgc agg tgc tca aat cct ctt gac aca tct gtg	789
Pro Asp Leu Val Val Cys Arg Cys Ser Asn Pro Leu Asp Thr Ser Val	
215 220 225	
aaa gag aaa ata tca atg ttt tgc cat gtg gaa cct gaa caa gtg atc	837
Lys Glu Lys Ile Ser Met Phe Cys His Val Glu Pro Glu Gln Val Ile	
230 235 240	
tgt gtt cat gat gtt tca tcc atc tac cgg gta ccc ttg ttg tta gaa	885
Cys Val His Asp Val Ser Ser Ile Tyr Arg Val Pro Leu Leu Leu Glu	
245 250 255	
gag caa ggg gtt gta gac tac ttt ctt cgg aga ctt gac ctt cct att	933
Glu Gln Gly Val Val Asp Tyr Phe Leu Arg Arg Leu Asp Leu Pro Ile	
260 265 270	
gag aga cag tca cga aag atg ctg atg aaa tgg aaa gag atg gca gac	981
Glu Arg Gln Ser Arg Lys Met Leu Met Lys Trp Lys Glu Met Ala Asp	
275 280 285 290	
agg tat gac cgc ttg ctg gag acc tgc tcg atc gct ctt gtg ggc aaa	1029
Arg Tyr Asp Arg Leu Leu Glu Thr Cys Ser Ile Ala Leu Val Gly Lys	
295 300 305	
tac ccc aaa ttc tca gac tcg tac gcc tct gtc att aaa gcg cta gag	1077
Tyr Pro Lys Phe Ser Asp Ser Tyr Ala Ser Val Ile Lys Ala Leu Glu	

310	315	320	
cac tct gca ttg gcc att aac cac aaa ctg gag atc aag tac atc gat			1125
His Ser Ala Leu Ala Ile Asn His Lys Leu Glu Ile Lys Tyr Ile Asp			
325	330	335	
tcc aca gac ctg gag cca agt acc ctg cag gaa gag cct gtg cgc tac			1173
Ser Thr Asp Leu Glu Pro Ser Thr Leu Gln Glu Glu Pro Val Arg Tyr			
340	345	350	
cat gag gca tgg cag aag ctc tgc agt gct cat gga gtg ctg gtt cca			1221
His Glu Ala Trp Gln Lys Leu Cys Ser Ala His Gly Val Leu Val Pro			
355	360	365	370
gga gga ttt ggt gtt cgg gga aca gaa gga aaa att caa gca att gct			1269
Gly Gly Phe Gly Val Arg Gly Thr Glu Gly Lys Ile Gln Ala Ile Ala			
375	380	385	
tgg tct cgg aaa cag aag aag cct ttt ttg ggt gtg tgc tta gga att			1317
Trp Ser Arg Lys Gln Lys Lys Pro Phe Leu Gly Val Cys Leu Gly Ile			
390	395	400	
cag cta gca gtg gta gaa ttt tca aga aat gtg ctg gga tgg caa gat			1365
Gln Leu Ala Val Val Glu Phe Ser Arg Asn Val Leu Gly Trp Gln Asp			
405	410	415	
gcc aat tct aca gag ttt gac ccc aag act agt cac cct gtg gtt ata			1413
Ala Asn Ser Thr Glu Phe Asp Pro Lys Thr Ser His Pro Val Val Ile			
420	425	430	
gac atg cca gaa cat aac cct ggg caa atg ggt gga acc atg agg ctg			1461
Asp Met Pro Glu His Asn Pro Gly Gln Met Gly Gly Thr Met Arg Leu			
435	440	445	450
ggc aag agg aga acc ctg ttc cag acc aag aac tca gtc atg agg aaa			1509
Gly Lys Arg Arg Thr Leu Phe Gln Thr Lys Asn Ser Val Met Arg Lys			
455	460	465	
ctc tat gga gac aca gac tac ttg gaa gaa agg cac cgc cac cga ttt			1557

Leu Tyr Gly Asp Thr Asp Tyr Leu Glu Glu Arg His Arg His Arg Phe
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 Glu Val Asn Pro Val Leu Lys Lys Cys Leu Glu Glu Gln Gly Leu Lys
 485 490 495
 ttc gtt ggc caa gat gtg gaa ggc gag agg atg gag atc gtg gag ttg 1653
 Phe Val Gly Gln Asp Val Glu Gly Glu Arg Met Glu Ile Val Glu Leu
 500 505 510
 gaa gat cat cca ttt ttt gtt gga gtg cag tat cac ccc gag ttc ctg 1701
 Glu Asp His Pro Phe Phe Val Gly Val Gln Tyr His Pro Glu Phe Leu
 515 520 525 530
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 Ser Arg Pro Ile Lys Pro Ser Pro Pro Tyr Phe Gly Leu Leu Leu Ala
 535 540 545
 tct gtg ggg cgg ctc cca cat tac ctt cag aaa ggt tgc cgg ctc tca 1797
 Ser Val Gly Arg Leu Pro His Tyr Leu Gln Lys Gly Cys Arg Leu Ser
 550 555 560
 ccc agg gac act tac agt gac aga agc ggg agc agc tcc ccc gac tgc 1845
 Pro Arg Asp Thr Tyr Ser Asp Arg Ser Gly Ser Ser Ser Pro Asp Ser
 565 570 575
 gaa atc act gaa ctc aag ttt cca tca ata agt cag gac tga 1887
 Glu Ile Thr Glu Leu Lys Phe Pro Ser Ile Ser Gln Asp
 580 585 590
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 ttgacacttc ttttaaatta tgtttttatt aagattatit tattatgggg gaaaagcatt 2007
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<210> 420

<211> 591

<212> PRT

<213> Mus musculus

<400> 420

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				20					25					30	
His	Val	Thr	Ser	Phe	Lys	Ile	Asp	Pro	Tyr	Ile	Asn	Ile	Asp	Ala	Gly
				35					40					45	
Thr	Phe	Ser	Pro	Tyr	Glu	His	Gly	Glu	Val	Phe	Val	Leu	Asp	Asp	Gly
				50					55					60	
Gly	Glu	Val	Asp	Leu	Asp	Leu	Gly	Asn	Tyr	Glu	Arg	Phe	Leu	Asp	Ile
				65					70					75	
Arg	Leu	Thr	Lys	Asp	Asn	Asn	Leu	Thr	Thr	Gly	Lys	Ile	Tyr	Gln	Tyr
				85					90					95	
Val	Ile	Asn	Lys	Glu	Arg	Lys	Gly	Asp	Tyr	Leu	Gly	Lys	Thr	Val	Gln
				100					105					110	

Val Val Pro His Ile Thr Asp Ala Ile Gln Glu Trp Val Met Arg Gln
 115 120 125
 Ala Leu Ile Pro Val Asp Glu Asp Gly Leu Glu Pro Gln Val Cys Val
 130 135 140
 Ile Glu Leu Gly Gly Thr Val Gly Asp Ile Glu Ser Met Pro Phe Ile
 145 150 155 160
 Glu Ala Phe Arg Gln Phe Gln Phe Lys Val Lys Arg Glu Asn Phe Cys
 165 170 175
 Asn Ile His Val Ser Leu Val Pro Gln Pro Ser Ser Thr Gly Glu Gln
 180 185 190
 Lys Thr Lys Pro Thr Gln Asn Ser Val Arg Glu Leu Arg Gly Leu Gly
 195 200 205
 Leu Ser Pro Asp Leu Val Val Cys Arg Cys Ser Asn Pro Leu Asp Thr
 210 215 220
 Ser Val Lys Glu Lys Ile Ser Met Phe Cys His Val Glu Pro Glu Gln
 225 230 235 240
 Val Ile Cys Val His Asp Val Ser Ser Ile Tyr Arg Val Pro Leu Leu
 245 250 255
 Leu Glu Glu Gln Gly Val Val Asp Tyr Phe Leu Arg Arg Leu Asp Leu
 260 265 270
 Pro Ile Glu Arg Gln Ser Arg Lys Met Leu Met Lys Trp Lys Glu Met
 275 280 285
 Ala Asp Arg Tyr Asp Arg Leu Leu Glu Thr Cys Ser Ile Ala Leu Val
 290 295 300
 Gly Lys Tyr Pro Lys Phe Ser Asp Ser Tyr Ala Ser Val Ile Lys Ala
 305 310 315 320
 Leu Glu His Ser Ala Leu Ala Ile Asn His Lys Leu Glu Ile Lys Tyr
 325 330 335
 Ile Asp Ser Thr Asp Leu Glu Pro Ser Thr Leu Gln Glu Glu Pro Val

340	345	350
Arg Tyr His Glu Ala Trp Gln Lys Leu Cys Ser Ala His Gly Val Leu		
355	360	365
Val Pro Gly Gly Phe Gly Val Arg Gly Thr Glu Gly Lys Ile Gln Ala		
370	375	380
Ile Ala Trp Ser Arg Lys Gln Lys Lys Pro Phe Leu Gly Val Cys Leu		
385	390	395
Gly Ile Gln Leu Ala Val Val Glu Phe Ser Arg Asn Val Leu Gly Trp		400
405	410	415
Gln Asp Ala Asn Ser Thr Glu Phe Asp Pro Lys Thr Ser His Pro Val		
420	425	430
Val Ile Asp Met Pro Glu His Asn Pro Gly Gln Met Gly Gly Thr Met		
435	440	445
Arg Leu Gly Lys Arg Arg Thr Leu Phe Gln Thr Lys Asn Ser Val Met		
450	455	460
Arg Lys Leu Tyr Gly Asp Thr Asp Tyr Leu Glu Glu Arg His Arg His		
465	470	475
Arg Phe Glu Val Asn Pro Val Leu Lys Lys Cys Leu Glu Glu Gln Gly		480
485	490	495
Leu Lys Phe Val Gly Gln Asp Val Glu Gly Glu Arg Met Glu Ile Val		
500	505	510
Glu Leu Glu Asp His Pro Phe Phe Val Gly Val Gln Tyr His Pro Glu		
515	520	525
Phe Leu Ser Arg Pro Ile Lys Pro Ser Pro Pro Tyr Phe Gly Leu Leu		
530	535	540
Leu Ala Ser Val Gly Arg Leu Pro His Tyr Leu Gln Lys Gly Cys Arg		
545	550	555
Leu Ser Pro Arg Asp Thr Tyr Ser Asp Arg Ser Gly Ser Ser Ser Pro		560
565	570	575

Asp Ser Glu Ile Thr Glu Leu Lys Phe Pro Ser Ile Ser Gln Asp

580

585

590

<210> 421

<211> 3364

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (113).. (2974)

<400> 421

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Met Asn

1

ata cgg aag ccc ctc tgt tgc aac tcc gtg gtt ggg gcc tgc acc ctt 166

Ile Arg Lys Pro Leu Cys Ser Asn Ser Val Val Gly Ala Cys Thr Leu

5

10

15

atc tct ctg act aca gcg gtc atc ctg ggt cac ctc atg ctt cgg gag 214

Ile Ser Leu Thr Thr Ala Val Ile Leu Gly His Leu Met Leu Arg Glu

20

25

30

tta atg ctg ctt ccc caa gac ctt cat gag tcc tct tca gga ctg tgg 262

Leu Met Leu Leu Pro Gln Asp Leu His Glu Ser Ser Ser Gly Leu Trp

35

40

45

50

aag acg tac cga cct cac cac cag gaa ggt tac gag cca ggg cct ctg 310

Lys Thr Tyr Arg Pro His His Gln Glu Gly Tyr Glu Pro Gly Pro Leu

55

60

65

cac atc cag gag cag act gaa cag ccc aaa gaa gca ccc aca cag tgt 358
 His Ile Gln Glu Gln Thr Glu Gln Pro Lys Glu Ala Pro Thr Gln Cys
 70 75 80
 gat gtg ccc ccc agc agc cgc ttt gac tgt gcc ccc gac aaa ggc atc 406
 Asp Val Pro Pro Ser Ser Arg Phe Asp Cys Ala Pro Asp Lys Gly Ile
 85 90 95
 tca cag gag caa tgc gag gcc cga ggc tgc tgc tat gtc cca gca ggg 454
 Ser Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Val Pro Ala Gly
 100 105 110
 cag gtg ctg aag gag cca cag ata ggg cag ccc tgg tgt ttc ttc cct 502
 Gln Val Leu Lys Glu Pro Gln Ile Gly Gln Pro Trp Cys Phe Phe Pro
 115 120 125 130
 ccc agc tac cca agc tac cgt cta gag aac ctg agc tct aca gag tcg 550
 Pro Ser Tyr Pro Ser Tyr Arg Leu Glu Asn Leu Ser Ser Thr Glu Ser
 135 140 145
 ggg tac aca gcc acc ctg acc cgt acc agc ccg acc ttc ttc cca aag 598
 Gly Tyr Thr Ala Thr Leu Thr Arg Thr Ser Pro Thr Phe Phe Pro Lys
 150 155 160
 gat gtg ctg acc tta cag ctg gag gtg ctg atg gag aca gac agc cgc 646
 Asp Val Leu Thr Leu Gln Leu Glu Val Leu Met Glu Thr Asp Ser Arg
 165 170 175
 ctc cac ttc aag atc aaa gat ccc gca agt aag cgc tac gaa gtg ccc 694
 Leu His Phe Lys Ile Lys Asp Pro Ala Ser Lys Arg Tyr Glu Val Pro
 180 185 190
 ctg gag acc cca cgt gtg ctg agc cag gca cca tcc cca ctt tac agc 742
 Leu Glu Thr Pro Arg Val Leu Ser Gln Ala Pro Ser Pro Leu Tyr Ser
 195 200 205 210
 gtg gaa ttc tca gag gaa ccc ttt gga gtg atc gtt cgt agg aag ctt 790
 Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg Lys Leu

215	220	225	
ggt ggc cga gtg ttg ctg aac aca acc gtg gcc ccc ctg ttc ttc gct			838
Gly Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe Phe Ala			
230	235	240	
gac cag ttc ctg cag ctg tcc act tcc ctg ccc gcc cag cac atc aca			886
Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ala Gln His Ile Thr			
245	250	255	
ggc ctg ggg gaa cac ctc agc cca ctc atg ctc agc acc gac tgg gct			934
Gly Leu Gly Glu His Leu Ser Pro Leu Met Leu Ser Thr Asp Trp Ala			
260	265	270	
cgt atc acc ctc tgg aac cgg gac aca cca ccc tcg caa ggt acc aac			982
Arg Ile Thr Leu Trp Asn Arg Asp Thr Pro Pro Ser Gln Gly Thr Asn			
275	280	285	290
ctc tac ggg tca cat cct ttc tac ctg gca ctg gag gac ggt ggc ttg			1030
Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly Gly Leu			
295	300	305	
gct cac ggt gtc ttc ttg cta aac agc aat gcc atg gat gtc atc ctg			1078
Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val Ile Leu			
310	315	320	
caa ccc agc cca gcc cta acc tgg agg tca acg ggc ggg atc ctg gat			1126
Gln Pro Ser Pro Ala Leu Thr Trp Arg Ser Thr Gly Gly Ile Leu Asp			
325	330	335	
gtg tat gtg ttc cta ggc cca gag ccc aag agc gtc gtg caa caa tac			1174
Val Tyr Val Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln Gln Tyr			
340	345	350	
ctg gat gtt gtg gga tac ccc ttt atg cct cca tac tgg ggc ctc ggc			1222
Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly Leu Gly			
355	360	365	370
ttc cac ctc tgc cgc tgg ggc tac tcc tcg acc gcc att gtc cgc cag			1270

Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Val Arg Gln
 375 380 385
 gta gtg gag aac atg acc agg aca cac ttc ccg ctg gac gtg caa tgg 1318
 Val Val Glu Asn Met Thr Arg Thr His Phe Pro Leu Asp Val Gln Trp
 390 395 400
 aat gac ctg gac tac atg gac gcc cga aga gac ttc acc ttc aac cag 1366
 Asn Asp Leu Asp Tyr Met Asp Ala Arg Arg Asp Phe Thr Phe Asn Gln
 405 410 415
 gac agc ttt gcc gac ttc cca gac atg gtg cgg gac gtg cac cag ggt 1414
 Asp Ser Phe Ala Asp Phe Pro Asp Met Val Arg Asp Val His Gln Gly
 420 425 430
 ggc cgg cgc tac atg atg atc gtg gac cct gcc atc agc agc gca ggc 1462
 Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser Ala Gly
 435 440 445 450
 cct gct ggg agt tac agg ccc tac gac gag ggt ctg cgg agg ggc gtg 1510
 Pro Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg Gly Val
 455 460 465
 ttc atc acc aac gag act ggg cag ccg ctg att ggg aag gtt tgt cct 1558
 Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val Cys Pro
 470 475 480
 gga acc acc gcc ttc cct gat ttc acc aac cct gag acc ctt gac tgg 1606
 Gly Thr Thr Ala Phe Pro Asp Phe Thr Asn Pro Glu Thr Leu Asp Trp
 485 490 495
 tgg cag gac atg gtg tct gag ttc cac rcc cag gtg ccc ttc gat ggc 1654
 Trp Gln Asp Met Val Ser Glu Phe His Xaa Gln Val Pro Phe Asp Gly
 500 505 510
 atg tgg ctc gac atg aac gaa ccg tcc aac ttc gtt aga ggc tct cag 1702
 Met Trp Leu Asp Met Asn Glu Pro Ser Asn Phe Val Arg Gly Ser Gln
 515 520 525 530

cag ggc tgc ccc aac aat gaa ctg gag aac ccc ccc tat gtr ccc ggg 1750
 Gln Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Xaa Pro Gly
 535 540 545
 gtg gtt ggc ggg atc ttg cag gca gcc acc atc tgt gcc tcc agc cac 1798
 Val Val Gly Gly Ile Leu Gln Ala Ala Thr Ile Cys Ala Ser Ser His
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 caa ttc ctc tcc aca cac tac aac ctc cac aac ctg tac ggc ctc act 1846
 Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly Leu Thr
 565 570 575
 gaa gct atc gcc tcc agc agg gcc ctg gtc aag act cgg gga aca cga 1894
 Glu Ala Ile Ala Ser Ser Arg Ala Leu Val Lys Thr Arg Gly Thr Arg
 580 585 590
 ccc ttt gtg atc tcc cgc tca acc ttc tcg ggc cac ggc cgg tac gct 1942
 Pro Phe Val Ile Ser Arg Ser Thr Phe Ser Gly His Gly Arg Tyr Ala
 595 600 605 610
 ggt cac tgg aca gag gat gtg cgg acg tct tgg gag cat ctt gca tac 1990
 Gly His Trp Thr Glu Asp Val Arg Thr Ser Trp Glu His Leu Ala Tyr
 615 620 625
 tct gtg cca gac atc ctg cag ttc aac ctg ctg ggc gtg ccc ctg gtc 2038
 Ser Val Pro Asp Ile Leu Gln Phe Asn Leu Leu Gly Val Pro Leu Val
 630 635 640
 ggg gcg gac atc tgc ggc ttc ata gga gac acg tca gaa gag ctg tgt 2086
 Gly Ala Asp Ile Cys Gly Phe Ile Gly Asp Thr Ser Glu Glu Leu Cys
 645 650 655
 gtg cgc tgg acc cag ttg ggg gcc ttc tac ccc ttc atg cgg aac cac 2134
 Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg Asn His
 660 665 670
 aat gac ctg aat agc gtg cct cag gag ccg tac agg ttc agc gag acg 2182
 Asn Asp Leu Asn Ser Val Pro Gln Glu Pro Tyr Arg Phe Ser Glu Thr

675	680	685	690	
gcg cag cag gcc atg agg aag gcc ttc gcc tta cgc tat gcc ctt ctg				2230
Ala Gln Gln Ala Met Arg Lys Ala Phe Ala Leu Arg Tyr Ala Leu Leu				
	695	700	705	
ccc tac ctg tac act ctc ttc cac cgc gcc cac gtc aga gga gac acg				2278
Pro Tyr Leu Tyr Thr Leu Phe His Arg Ala His Val Arg Gly Asp Thr				
	710	715	720	
gtg gcc cgg ccc ctc ttc ctg gag ttc cgt gag gat ccc agc acc tgg				2326
Val Ala Arg Pro Leu Phe Leu Glu Phe Arg Glu Asp Pro Ser Thr Trp				
	725	730	735	
tct gtg gac cgc cag ctc ttg tgg ggg ccg gcc ctg ctc atc aca cct				2374
Ser Val Asp Arg Gln Leu Leu Trp Gly Pro Ala Leu Leu Ile Thr Pro				
	740	745	750	
gtg ctt gag cct ggg aaa act gaa gtg acg ggc tac ttc ccc aag ggc				2422
Val Leu Glu Pro Gly Lys Thr Glu Val Thr Gly Tyr Phe Pro Lys Gly				
755	760	765	770	
acg tgg tac aac atg cag gtg gtg tca gtg gat tcc ctc ggt act ctc				2470
Thr Trp Tyr Asn Met Gln Val Val Ser Val Asp Ser Leu Gly Thr Leu				
	775	780	785	
cct tct cca tca tcg gct tca tcc ttc aga tct gct gtc cag agc aag				2518
Pro Ser Pro Ser Ser Ala Ser Ser Phe Arg Ser Ala Val Gln Ser Lys				
	790	795	800	
ggg cag tgg ctg aca ctg gaa gcc cca ctg gat acc atc aac gtg cac				2566
Gly Gln Trp Leu Thr Leu Glu Ala Pro Leu Asp Thr Ile Asn Val His				
	805	810	815	
ctg agg gag ggg tac atc ata ccg ctg cag ggt ccc agc ctc aca acc				2614
Leu Arg Glu Gly Tyr Ile Ile Pro Leu Gln Gly Pro Ser Leu Thr Thr				
	820	825	830	
acg gag tcc cga aag cag ccc atg gct ctg gct gtg gca tta aca gca				2662

Thr Glu Ser Arg Lys Gln Pro Met Ala Leu Ala Val Ala Leu Thr Ala
 835 840 845 850
 agc ggc gag gcc gat ggg gag ctg ttc tgg gac gac ggg gag agc ctt 2710
 Ser Gly Glu Ala Asp Gly Glu Leu Phe Trp Asp Asp Gly Glu Ser Leu
 855 860 865
 gca gtt ctg gag cat ggg gcc tac aca ctg gtc acc ttc tca gcc aag 2758
 Ala Val Leu Glu His Gly Ala Tyr Thr Leu Val Thr Phe Ser Ala Lys
 870 875 880
 aac aat acc att gtc aac aag tta gtc cgt gtc acc aag gag gga gct 2806
 Asn Asn Thr Ile Val Asn Lys Leu Val Arg Val Thr Lys Glu Gly Ala
 885 890 895
 gag cta caa ctg aag gag gtg acc gtc ttg gga gtg gcc aca gct cct 2854
 Glu Leu Gln Leu Lys Glu Val Thr Val Leu Gly Val Ala Thr Ala Pro
 900 905 910
 acc cag gtc ctt tcc aac ggc atc cct gtc tcc aat ttc acc tac agc 2902
 Thr Gln Val Leu Ser Asn Gly Ile Pro Val Ser Asn Phe Thr Tyr Ser
 915 920 925 930
 cct gac aac aag agc ctg gcc atc cct gtc tca ctg ctg atg gga gag 2950
 Pro Asp Asn Lys Ser Leu Ala Ile Pro Val Ser Leu Leu Met Gly Glu
 935 940 945
 ctg ttt caa atc agc tgg tcc tag gagagtcctg cgtttacaga ggcctccagg 3004
 Leu Phe Gln Ile Ser Trp Ser
 950
 gaggcagagg gagcttgagc tggctctggc tgggtgctcc tgtaagacct gcgtcctgct 3064
 ctccctgacac atctttgagt ttttcccacc gtgttgctgc atgcgcccct gaagctctgt 3124
 gttcttagga gagtgaggct cgccctcacct gccccacccc agctgtctgt cccctcacctg 3184
 gtcactagag aatgtggagc tcggcgtggg gacatcgtgt ctgcaccaac atcaggctgt 3244
 gcagccactg cagccgcaac cctgcagaga cagagctggt gccttcacca ggttcccaag 3304
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<210> 422

<211> 953

<212> PRT

<213> Mus musculus

<400> 422

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 1 5 10 15
 Thr Leu Ile Ser Leu Thr Thr Ala Val Ile Leu Gly His Leu Met Leu
 20 25 30
 Arg Glu Leu Met Leu Leu Pro Gln Asp Leu His Glu Ser Ser Ser Gly
 35 40 45
 Leu Trp Lys Thr Tyr Arg Pro His His Gln Glu Gly Tyr Glu Pro Gly
 50 55 60
 Pro Leu His Ile Gln Glu Gln Thr Glu Gln Pro Lys Glu Ala Pro Thr
 65 70 75 80
 Gln Cys Asp Val Pro Pro Ser Ser Arg Phe Asp Cys Ala Pro Asp Lys
 85 90 95
 Gly Ile Ser Gln Glu Gln Cys Glu Ala Arg Gly Cys Cys Tyr Val Pro
 100 105 110
 Ala Gly Gln Val Leu Lys Glu Pro Gln Ile Gly Gln Pro Trp Cys Phe
 115 120 125
 Phe Pro Pro Ser Tyr Pro Ser Tyr Arg Leu Glu Asn Leu Ser Ser Thr
 130 135 140
 Glu Ser Gly Tyr Thr Ala Thr Leu Thr Arg Thr Ser Pro Thr Phe Phe
 145 150 155 160
 Pro Lys Asp Val Leu Thr Leu Gln Leu Glu Val Leu Met Glu Thr Asp
 165 170 175

Ser Arg Leu His Phe Lys Ile Lys Asp Pro Ala Ser Lys Arg Tyr Glu
 180 185 190
 Val Pro Leu Glu Thr Pro Arg Val Leu Ser Gln Ala Pro Ser Pro Leu
 195 200 205
 Tyr Ser Val Glu Phe Ser Glu Glu Pro Phe Gly Val Ile Val Arg Arg
 210 215 220
 Lys Leu Gly Gly Arg Val Leu Leu Asn Thr Thr Val Ala Pro Leu Phe
 225 230 235 240
 Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr Ser Leu Pro Ala Gln His
 245 250 255
 Ile Thr Gly Leu Gly Glu His Leu Ser Pro Leu Met Leu Ser Thr Asp
 260 265 270
 Trp Ala Arg Ile Thr Leu Trp Asn Arg Asp Thr Pro Pro Ser Gln Gly
 275 280 285
 Thr Asn Leu Tyr Gly Ser His Pro Phe Tyr Leu Ala Leu Glu Asp Gly
 290 295 300
 Gly Leu Ala His Gly Val Phe Leu Leu Asn Ser Asn Ala Met Asp Val
 305 310 315 320
 Ile Leu Gln Pro Ser Pro Ala Leu Thr Trp Arg Ser Thr Gly Gly Ile
 325 330 335
 Leu Asp Val Tyr Val Phe Leu Gly Pro Glu Pro Lys Ser Val Val Gln
 340 345 350
 Gln Tyr Leu Asp Val Val Gly Tyr Pro Phe Met Pro Pro Tyr Trp Gly
 355 360 365
 Leu Gly Phe His Leu Cys Arg Trp Gly Tyr Ser Ser Thr Ala Ile Val
 370 375 380
 Arg Gln Val Val Glu Asn Met Thr Arg Thr His Phe Pro Leu Asp Val
 385 390 395 400
 Gln Trp Asn Asp Leu Asp Tyr Met Asp Ala Arg Arg Asp Phe Thr Phe

	405	410	415
Asn Gln Asp Ser Phe Ala Asp Phe Pro Asp Met Val Arg Asp Val His			
	420	425	430
Gln Gly Gly Arg Arg Tyr Met Met Ile Val Asp Pro Ala Ile Ser Ser			
	435	440	445
Ala Gly Pro Ala Gly Ser Tyr Arg Pro Tyr Asp Glu Gly Leu Arg Arg			
	450	455	460
Gly Val Phe Ile Thr Asn Glu Thr Gly Gln Pro Leu Ile Gly Lys Val			
465	470	475	480
Cys Pro Gly Thr Thr Ala Phe Pro Asp Phe Thr Asn Pro Glu Thr Leu			
	485	490	495
Asp Trp Trp Gln Asp Met Val Ser Glu Phe His Xaa Gln Val Pro Phe			
	500	505	510
Asp Gly Met Trp Leu Asp Met Asn Glu Pro Ser Asn Phe Val Arg Gly			
	515	520	525
Ser Gln Gln Gly Cys Pro Asn Asn Glu Leu Glu Asn Pro Pro Tyr Xaa			
	530	535	540
Pro Gly Val Val Gly Gly Ile Leu Gln Ala Ala Thr Ile Cys Ala Ser			
545	550	555	560
Ser His Gln Phe Leu Ser Thr His Tyr Asn Leu His Asn Leu Tyr Gly			
	565	570	575
Leu Thr Glu Ala Ile Ala Ser Ser Arg Ala Leu Val Lys Thr Arg Gly			
	580	585	590
Thr Arg Pro Phe Val Ile Ser Arg Ser Thr Phe Ser Gly His Gly Arg			
	595	600	605
Tyr Ala Gly His Trp Thr Glu Asp Val Arg Thr Ser Trp Glu His Leu			
	610	615	620
Ala Tyr Ser Val Pro Asp Ile Leu Gln Phe Asn Leu Leu Gly Val Pro			
625	630	635	640

Leu Val Gly Ala Asp Ile Cys Gly Phe Ile Gly Asp Thr Ser Glu Glu
 645 650 655
 Leu Cys Val Arg Trp Thr Gln Leu Gly Ala Phe Tyr Pro Phe Met Arg
 660 665 670
 Asn His Asn Asp Leu Asn Ser Val Pro Gln Glu Pro Tyr Arg Phe Ser
 675 680 685
 Glu Thr Ala Gln Gln Ala Met Arg Lys Ala Phe Ala Leu Arg Tyr Ala
 690 695 700
 Leu Leu Pro Tyr Leu Tyr Thr Leu Phe His Arg Ala His Val Arg Gly
 705 710 715 720
 Asp Thr Val Ala Arg Pro Leu Phe Leu Glu Phe Arg Glu Asp Pro Ser
 725 730 735
 Thr Trp Ser Val Asp Arg Gln Leu Leu Trp Gly Pro Ala Leu Leu Ile
 740 745 750
 Thr Pro Val Leu Glu Pro Gly Lys Thr Glu Val Thr Gly Tyr Phe Pro
 755 760 765
 Lys Gly Thr Trp Tyr Asn Met Gln Val Val Ser Val Asp Ser Leu Gly
 770 775 780
 Thr Leu Pro Ser Pro Ser Ser Ala Ser Ser Phe Arg Ser Ala Val Gln
 785 790 795 800
 Ser Lys Gly Gln Trp Leu Thr Leu Glu Ala Pro Leu Asp Thr Ile Asn
 805 810 815
 Val His Leu Arg Glu Gly Tyr Ile Ile Pro Leu Gln Gly Pro Ser Leu
 820 825 830
 Thr Thr Thr Glu Ser Arg Lys Gln Pro Met Ala Leu Ala Val Ala Leu
 835 840 845
 Thr Ala Ser Gly Glu Ala Asp Gly Glu Leu Phe Trp Asp Asp Gly Glu
 850 855 860
 Ser Leu Ala Val Leu Glu His Gly Ala Tyr Thr Leu Val Thr Phe Ser

865 870 875 880
 Ala Lys Asn Asn Thr Ile Val Asn Lys Leu Val Arg Val Thr Lys Glu
 885 890 895
 Gly Ala Glu Leu Gln Leu Lys Glu Val Thr Val Leu Gly Val Ala Thr
 900 905 910
 Ala Pro Thr Gln Val Leu Ser Asn Gly Ile Pro Val Ser Asn Phe Thr
 915 920 925
 Tyr Ser Pro Asp Asn Lys Ser Leu Ala Ile Pro Val Ser Leu Leu Met
 930 935 940
 Gly Glu Leu Phe Gln Ile Ser Trp Ser
 945 950

<210> 423

<211> 566

<212> DNA

<213> Mus musculus

<400> 423

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 acccaccaaa aacaaatcag tagtttgcca gatgaagtgg aggcaaagga aaagctaata 180
 actgacctcc aagaccacaaa ccagaagatg gtgttggagc aggaacggct aagggtggag 240
 catgagaggc tgaaggctac agaccaagag aagagcagga agctgcacga gctcacgggt 300
 atgcaagaca gacgagaaca agcaagacaa gacttgaagg gtttggagga gaccgtggca 360
 aaagaacttc agactttaca caacctgcgt aagctctttg ttcaggactt ggctaccagn 420
 gtgaaaaaga gcgggcgangt cgactctgac gacactggcg gcagtgtctc acagaagcag 480
 agaattctct tgctttgaaa cagctttgac agctcaccaa gtgcacagcc gttggctcgcg 540
 atatgcagat ctcgctgtag ctcccta 566

<210> 424

<211> 322

<212> DNA

<213> Mus musculus

<400> 424

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 gccgagtcctt ggccctgtctt tgaggatcgg cgagggccgg cggcgggttca tcatgggtgg 120
 ctttttctga agtatttttc cagtctcttt ggaaccagag aaatgaggat ttttaattttg 180
 ggattagatg gtgctggaaa aacaacaatt ttgtacaggt tacaggttgg agaagttgtt 240
 actactatcc cactattgga tttaatgtgg agacgggtgac atacaaaaat ctcaaattcc 300
 aagtttggga cttaggacga ca 322

<210> 425

<211> 754

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (42).. (356)

<400> 425

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 Met Ser His Thr Ile
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 ttg ctg gta cag cct acc aag agg cca gag ggc agg act tat gct gac 104
 Leu Leu Val Gln Pro Thr Lys Arg Pro Glu Gly Arg Thr Tyr Ala Asp
 10 15 20

tat gag tct gtg aat gag tgc atg gaa ggt gtt tgt aaa atg tat gaa 152
 Tyr Glu Ser Val Asn Glu Cys Met Glu Gly Val Cys Lys Met Tyr Glu
 25 30 35
 gaa cat ctg aag agg atg aat ccc aac agc cct tcc atc aca tac gat 200
 Glu His Leu Lys Arg Met Asn Pro Asn Ser Pro Ser Ile Thr Tyr Asp
 40 45 50
 atc agc cag ttg ttt gat ttt att gac gat ctg gca gac ctc agc tgt 248
 Ile Ser Gln Leu Phe Asp Phe Ile Asp Asp Leu Ala Asp Leu Ser Cys
 55 60 65
 ctg gtt tac cga gct gat aca cag aca tac cag ccg tat aac aaa gac 296
 Leu Val Tyr Arg Ala Asp Thr Gln Thr Tyr Gln Pro Tyr Asn Lys Asp
 70 75 80 85
 tgg atc aaa gag aag atc tac gtg ctc ctc cgt cgg cag gcc caa cag 344
 Trp Ile Lys Glu Lys Ile Tyr Val Leu Leu Arg Arg Gln Ala Gln Gln
 90 95 100
 gct ggg aag taa ttgagtcgga agcattgggg ctgggggtgg acttgggaaca 396
 Ala Gly Lys

105

ggtacataca gcgtgctgta gtgaaccttt tgtatgatag cgatcctggt tcaacgttgt 456
 tacactcaag ccaagattga atgtctgaca tgaaccgtga atgatcttcg tcactctgaa 516
 gccaccgtgg ccctttgctc ctttactttc atttttttac ttaaacattt ttatgataat 576
 acaaatagaa aacatttttc ccatttaagg ttgggtccgg tccttgaaac tgtcgagtct 636
 gcttttaagc agtgagcgca ctaacctttt gtgggggtgg ggtggggaca aggttagtca 696
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<210> 426

<211> 104

<212> PRT

<213> Mus musculus

<400> 426

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 20 25 30
 Cys Lys Met Tyr Glu Glu His Leu Lys Arg Met Asn Pro Asn Ser Pro
 35 40 45
 Ser Ile Thr Tyr Asp Ile Ser Gln Leu Phe Asp Phe Ile Asp Asp Leu
 50 55 60
 Ala Asp Leu Ser Cys Leu Val Tyr Arg Ala Asp Thr Gln Thr Tyr Gln
 65 70 75 80
 Pro Tyr Asn Lys Asp Trp Ile Lys Glu Lys Ile Tyr Val Leu Leu Arg
 85 90 95
 Arg Gln Ala Gln Gln Ala Gly Lys
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<210> 427

<211> 8476

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (4077).. (8213)

<400> 427

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tttcctcatc agtaaaaatg ggigtggcaa ttgtctccca gtgccattgt gaggaatcag 180
tgagattgac acacctgtgt gtgtttgtgag ttccigttaa gtgtcttggc acatgatagg 240
acactacgta gcaatcacag tagtatttgg ttaaggggca atatgtgtta gggtaggttc 300
taaaaaggga gaggacaatg gatttgcact gtcttttgag agaggaagag aaggaggaga 360
atcittatagt taacagacct tagaagagag gttaggagcca gaggcagggc cttcatttcc 420
tttgcaatta agcatctaag tctgggaaac atagctgttg ccaaggcgac ggatccctgc 480
tctgagatgc tttgttcagt ggcccagtaa atattcataat aaacactctg tatgtctgat 540
gaatgttctg aacatttcca aagaaacaga acactaggaa aaattacagc atggagtctc 600
aatgtggatc aaagaaaatg ctttcagggc agcatttgac ctctgagggt tggggaggaa 660
tggtccaggc ctgaggttgg aggggatccc agcctttagt gtgagcatag gcaaaggctt 720
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acagtgtgtc atgggttgcg gacctagact accttngtct tgacctaat gcaaacattc 900
gagctgtctg ttgatcccat cgactcagag gagaaacagg ggcactggat ggtacaaatt 960
atactttgaa gagactgtgc aaaacagaaa gttctcttgc tatctcttta atcacatgca 1020
aatccctaata ggttccagt catagctcac tgtgtgaaaa catgaactgt gccatgttgg 1080
catgactctc aggccacccc tgccactcaa acttgtttac aactcatgta cacttaggta 1140
ccatagttga cggcaaacat agagccagca actgctttta ggctacttaa atttactcat 1200
ctttatacaa atgcaccatt ttgttttaca gaagcaatgt tgttcagact ttatncaaaa 1260
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cagaacactg acctccaagg gatttaccat atagaaagag gaaggataan ccacaaaaag 1560
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Met

1

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 Glu Lys Phe Ile Lys Asp Val Ala Arg Asn Pro Lys Ser Gly Arg Ala
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 agg gag ctg aac gag cgt cct cct cca agg ttc ccc agg cct aat gat 4175
 Arg Glu Leu Asn Glu Arg Pro Pro Pro Arg Phe Pro Arg Pro Asn Asp
 20 25 30
 aac tgg aag gac agt tcc tcc agc aga aga gag tca gtg atc cag gag 4223
 Asn Trp Lys Asp Ser Ser Ser Ser Arg Arg Glu Ser Val Ile Gln Glu
 35 40 45
 agg ggt tat gaa ggg agc gca ttt agg ggc ggc ttc cgg ttc aac gca 4271
 Arg Gly Tyr Glu Gly Ser Ala Phe Arg Gly Gly Phe Arg Phe Asn Ala
 50 55 60 65
 gac ctg gct tcc aga agc aga gct cta gaa agg aag agg cgt tac cac 4319
 Asp Leu Ala Ser Arg Ser Arg Ala Leu Glu Arg Lys Arg Arg Tyr His
 70 75 80
 ttt gat tct gat gag cgg ggt tcg ggc cat gag cat aaa agc tgt gtg 4367
 Phe Asp Ser Asp Glu Arg Gly Ser Gly His Glu His Lys Ser Cys Val
 85 90 95
 agg aag aag cct ttt gag tgt ggt gct gag atg aga cag gct atg agc 4415

Arg Lys Lys Pro Phe Glu Cys Gly Ala Glu Met Arg Gln Ala Met Ser	
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atg ggc aac ctg aac agc cct tcc ttc tct gag tcg cag tca atc gat	4463
Met Gly Asn Leu Asn Ser Pro Ser Phe Ser Glu Ser Gln Ser Ile Asp	
115	120
ttt ggg gcc aac cca tac gtg tgt gat gag tgc ggg agg cag ttc agt	4511
Phe Gly Ala Asn Pro Tyr Val Cys Asp Glu Cys Gly Arg Gln Phe Ser	
130	135
gtc atc tct gag ttt gtt gag cac cag atc atg cac act agg gag aac	4559
Val Ile Ser Glu Phe Val Glu His Gln Ile Met His Thr Arg Glu Asn	
150	155
ctc tat gaa tat gga gag tcc ttt att cat agc gtg gct gtc aat gag	4607
Leu Tyr Glu Tyr Gly Glu Ser Phe Ile His Ser Val Ala Val Asn Glu	
165	170
gtg caa aaa ggt cag ggt ggg ggg aaa cgc ttt gag tgt aag gaa tgt	4655
Val Gln Lys Gly Gln Gly Gly Gly Lys Arg Phe Glu Cys Lys Glu Cys	
180	185
gga gaa acc ttc agt agg agt gct gcc ctg gca gag cac cgc caa atc	4703
Gly Glu Thr Phe Ser Arg Ser Ala Ala Leu Ala Glu His Arg Gln Ile	
195	200
cat gct aga aga tat ctt gca gaa tgt aga gat cag gag gat gag gag	4751
His Ala Arg Arg Tyr Leu Ala Glu Cys Arg Asp Gln Glu Asp Glu Glu	
210	215
acc atc atg cct agc ccg acc ttt agt gag ctg cag aag atg tat ggc	4799
Thr Ile Met Pro Ser Pro Thr Phe Ser Glu Leu Gln Lys Met Tyr Gly	
230	235
aaa gat aag ttc tat gag tgc aag gtg tgc aag gag acc ttt ctg cac	4847
Lys Asp Lys Phe Tyr Glu Cys Lys Val Cys Lys Glu Thr Phe Leu His	
245	250
	255

agt tcc gcc ctg att gag cac cag aaa atc cat ggt aga ggc aac tca 4895
 Ser Ser Ala Leu Ile Glu His Gln Lys Ile His Gly Arg Gly Asn Ser
 260 265 270
 gat gac aga gat aat gag cgt gaa cgc gaa cgt gat cgt cta cgt gca 4943
 Asp Asp Arg Asp Asn Glu Arg Glu Arg Glu Arg Asp Arg Leu Arg Ala
 275 280 285
 cgt gca cga gag cag cgt gag cgc gaa cgt gaa cgg gag cgt gag cgt 4991
 Arg Ala Arg Glu Gln Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg
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 gag ctt ggg gaa ccc ttt ctg acc tgt cca aac ttc aat gag ttt cgg 5039
 Glu Leu Gly Glu Pro Phe Leu Thr Cys Pro Asn Phe Asn Glu Phe Arg
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 aag atg tac agg aaa gac aaa atc tat gag tgc aaa gtg tgt ggg gag 5087
 Lys Met Tyr Arg Lys Asp Lys Ile Tyr Glu Cys Lys Val Cys Gly Glu
 325 330 335
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 Ser Phe Leu His Leu Ser Ser Leu Arg Glu His Gln Lys Ile His Thr
 340 345 350
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 Arg Gly Asn Pro Phe Glu Asn Lys Ser Arg Met Cys Glu Glu Thr Phe
 355 360 365
 gtc cct agt cag tct ctc cga cag aaa act tac aga gag aag ctg ttc 5231
 Val Pro Ser Gln Ser Leu Arg Gln Lys Thr Tyr Arg Glu Lys Leu Phe
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 Asp Phe Asn Asn Ala Arg Asp Ala Leu Met Gly Asn Ser Asp Ser Ser
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 gag cat cag aaa aac cgt tcc cga agg aac ttc ttt gag ggc aga gga 5327
 Glu His Gln Lys Asn Arg Ser Arg Arg Asn Phe Phe Glu Gly Arg Gly

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ttt gag aaa ccc ttc gtt gaa tct cag aag agt cat act ata aca aga	5375		
Phe Glu Lys Pro Phe Val Glu Ser Gln Lys Ser His Thr Ile Thr Arg			
420	425	430	
cca cct gaa aac aaa gac gat gac aag ccg ttc acc atc agt gtc aac	5423		
Pro Pro Glu Asn Lys Asp Asp Asp Lys Pro Phe Thr Ile Ser Val Asn			
435	440	445	
cct aat gac aag ctg aaa ttc ccc atc atg gaa aat ggc tcc cag ggc	5471		
Pro Asn Asp Lys Leu Lys Phe Pro Ile Met Glu Asn Gly Ser Gln Gly			
450	455	460	465
aaa tcc tat gag agg tct gtt att cat agc ttg gcg tcg gca gaa gct	5519		
Lys Ser Tyr Glu Arg Ser Val Ile His Ser Leu Ala Ser Ala Glu Ala			
470	475	480	
cag aag agt cat ggt gga ctg ggg ttc agt aaa cca gac cag tgg cag	5567		
Gln Lys Ser His Gly Gly Leu Gly Phe Ser Lys Pro Asp Gln Trp Gln			
485	490	495	
agt cta gca ccc aga gct caa gca gat tta cta ccc cag agc aca ctc	5615		
Ser Leu Ala Pro Arg Ala Gln Ala Asp Leu Leu Pro Gln Ser Thr Leu			
500	505	510	
tct gga ggc aac acc tat aaa gga aaa gaa tac aag gac tct atc atc	5663		
Ser Gly Gly Asn Thr Tyr Lys Gly Lys Glu Tyr Lys Asp Ser Ile Ile			
515	520	525	
cat agc ttg cca gct cct cga cct ctg aaa cgt ata gag caa atg acc	5711		
His Ser Leu Pro Ala Pro Arg Pro Leu Lys Arg Ile Glu Gln Met Thr			
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ata ttc aat gtg atg agg ggg gag aat cct cca ttt ata tcc cag ata	5759		
Ile Phe Asn Val Met Arg Gly Glu Asn Pro Pro Phe Ile Ser Gln Ile			
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 Glu Val Ala Ala Ala Thr Thr Thr His Gln Met Tyr Pro Val Leu Ser
 580 585 590
 ctc caa gtc ttt ctg gag agt ccc atg act cta agc agg atg tca cgt 5903
 Leu Gln Val Phe Leu Glu Ser Pro Met Thr Leu Ser Arg Met Ser Arg
 595 600 605
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 Phe Gln Phe Pro Ala Gln Val Phe Val Asn Thr Arg Lys Leu Val Pro
 610 615 620 625
 aaa aga agt aca ttg agc cca gga aca acg aga cct ctg tta tcc act 5999
 Lys Arg Ser Thr Leu Ser Pro Gly Thr Thr Arg Pro Leu Leu Ser Thr
 630 635 640
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 Pro Tyr Leu Leu Val Ser Cys Leu Gln Val Thr Val Ala Lys Phe Phe
 645 650 655
 gag tgt cag gaa tgc agg gag gcc ttt gct cgt agg tct gag ctc att 6095
 Glu Cys Gln Glu Cys Arg Glu Ala Phe Ala Arg Arg Ser Glu Leu Ile
 660 665 670
 gag cac cag aag att cat gat aga gaa gac ctt ctg gag ccg act tat 6143
 Glu His Gln Lys Ile His Asp Arg Glu Asp Leu Leu Glu Pro Thr Tyr
 675 680 685
 gag cgc tct gtc atc cgc agc ctt gcg ccc agt gac cct cag acc agt 6191
 Glu Arg Ser Val Ile Arg Ser Leu Ala Pro Ser Asp Pro Gln Thr Ser
 690 695 700 705
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 Tyr Ala Gln Glu Arg Phe Ile Gln Glu Gln Val Arg Lys Phe Arg Ala
 710 715 720

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Phe Gly Gln Arg Ser Thr Thr Ser Asn Asn Leu Ser Val Gln Lys Ile	
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tat gcc caa gag aca ttt aat gcc gag gag ccc cat gat aaa gaa act	6335
Tyr Ala Gln Glu Thr Phe Asn Ala Glu Glu Pro His Asp Lys Glu Thr	
740 745 750	
cat ggt caa aaa att cat gac aaa gag cca tat ggt aag gag ccc agt	6383
His Gly Gln Lys Ile His Asp Lys Glu Pro Tyr Gly Lys Glu Pro Ser	
755 760 765	
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Gly Lys Glu Pro His Gly Asp Glu Pro Gln Asp Lys Glu Pro Leu Asp	
770 775 780 785	
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Gln Glu Met Arg Ser Glu Glu Pro His Asp Asp Lys Pro His Gly Gln	
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Glu Pro His Asp Asp Met Arg Pro His Gly Gln Glu Pro His Asp Asp	
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Pro His Gly Asp Glu Pro His Asp Lys Glu Pro Ile Asp Gln Glu Met	
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cgc agt gaa gag ccc cac agt gaa gag tct cat ggt gat gag ccc cat	6671
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ggt gaa gag tcc cat ggc cag gag aaa gtt gaa gat gct acc att cag	6719
Gly Glu Glu Ser His Gly Gln Glu Lys Val Glu Asp Ala Thr Ile Gln	

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gcc tca gtt tct gaa gag cat cag aaa gat gac gct ggt gat gca atc			6767
Ala Ser Val Ser Glu Glu His Gln Lys Asp Asp Ala Gly Asp Ala Ile			
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tat gaa tgc cag gac tgt ggg ctg ggc ttt act gat ctc aat gac ctc			6815
Tyr Glu Cys Gln Asp Cys Gly Leu Gly Phe Thr Asp Leu Asn Asp Leu			
900	905	910	
aca agc cac cag gac acc cat agc agg aag gct ctg gtt gac agt cgt			6863
Thr Ser His Gln Asp Thr His Ser Arg Lys Ala Leu Val Asp Ser Arg			
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gga tat gca cat tct gaa gtt cat gcc cac tcc gtc agc gaa ttt gag			6911
Gly Tyr Ala His Ser Glu Val His Ala His Ser Val Ser Glu Phe Glu			
930	935	940	945
aaa aaa tgc tct gga gag aaa cta tat gaa tgt cca aaa tgt ggg gag			6959
Lys Lys Cys Ser Gly Glu Lys Leu Tyr Glu Cys Pro Lys Cys Gly Glu			
950	955	960	
tct ttc att cac agc tcg tta ctt ttc gag cac cag aga gtt cac gaa			7007
Ser Phe Ile His Ser Ser Leu Leu Phe Glu His Gln Arg Val His Glu			
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caa gac cag ctg tat tcc gta aag gcc tgt gat gac gct ttc atc gct			7055
Gln Asp Gln Leu Tyr Ser Val Lys Ala Cys Asp Asp Ala Phe Ile Ala			
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Leu Leu Pro Val Arg Pro Arg Arg Asn Cys Thr Val Glu Arg Asn Pro			
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Ala Val Ser Gly Ser Ala Ile Arg Cys Arg Gln Cys Gly Gln Gly Phe			
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att cac agt tct gcc cta aat gag cac atg aga cag cac aga gat aat			7199

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gaa ata atg gaa cag agt gag ctt tca gat gag att ttc att caa ggc	7247
Glu Ile Met Glu Gln Ser Glu Leu Ser Asp Glu Ile Phe Ile Gln Gly	
1045	1050
1055	
cta gcc ctc act gag tat cag ggg agt gaa aca gaa gag aag ctt ttc	7295
Leu Ala Leu Thr Glu Tyr Gln Gly Ser Glu Thr Glu Glu Lys Leu Phe	
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1070	
gag tgc aca atc tgt ggg gaa tgc ttc ttc act gcc aaa cag ctc ggg	7343
Glu Cys Thr Ile Cys Gly Glu Cys Phe Phe Thr Ala Lys Gln Leu Gly	
1075	1080
1085	
gac cac cac acc aaa gtt cac aag gat gag ccc tat gag tat ggg ccc	7391
Asp His His Thr Lys Val His Lys Asp Glu Pro Tyr Glu Tyr Gly Pro	
1090	1095
1100	1105
tcc tac acc cat gcc tcc ttt ctc acc gag ccc ctc agg aag cac atc	7439
Ser Tyr Thr His Ala Ser Phe Leu Thr Glu Pro Leu Arg Lys His Ile	
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Pro Leu Tyr Glu Cys Lys Asp Cys Gly Gln Ser Phe Leu Asp Asp Thr	
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1170	1175
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 Gly Asp Ala Asp Glu Pro Asp Gly Ala Asp Ile Glu Asp Pro Glu Glu
 1270 1275 1280
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 1285 1290 1295
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 ctg aaa agt cac gcc agt gtg atc atc ttc gag ccg gcc aat gct cct 8063
 Leu Lys Ser His Ala Ser Val Ile Ile Phe Glu Pro Ala Asn Ala Pro
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 Gly Glu Cys Ser Gly Tyr Ile Glu Arg Ala Ser Thr Ser Ala Gly Gly

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Ala Glu Gln Ala Asp Asp Lys Tyr Phe Lys Cys Asp Val Cys Gly Gln				
1350	1355	1360		
ctc ttc aac gac cgc ctc tcc ctt gcc aga cac cag aat tct cac act	8207			
Leu Phe Asn Asp Arg Leu Ser Leu Ala Arg His Gln Asn Ser His Thr				
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Gly				
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<213> Mus musculus

<400> 428

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35 40 45	
Glu Arg Gly Tyr Glu Gly Ser Ala Phe Arg Gly Gly Phe Arg Phe Asn	
50 55 60	
Ala Asp Leu Ala Ser Arg Ser Arg Ala Leu Glu Arg Lys Arg Arg Tyr	

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His Phe Asp Ser Asp Glu Arg Gly Ser Gly His Glu His Lys Ser Cys			
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Val Arg Lys Lys Pro Phe Glu Cys Gly Ala Glu Met Arg Gln Ala Met			
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Ser Met Gly Asn Leu Asn Ser Pro Ser Phe Ser Glu Ser Gln Ser Ile			
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Asp Phe Gly Ala Asn Pro Tyr Val Cys Asp Glu Cys Gly Arg Gln Phe			
	130	135	140
Ser Val Ile Ser Glu Phe Val Glu His Gln Ile Met His Thr Arg Glu			
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Asn Leu Tyr Glu Tyr Gly Glu Ser Phe Ile His Ser Val Ala Val Asn			
	165	170	175
Glu Val Gln Lys Gly Gln Gly Gly Gly Lys Arg Phe Glu Cys Lys Glu			
	180	185	190
Cys Gly Glu Thr Phe Ser Arg Ser Ala Ala Leu Ala Glu His Arg Gln			
	195	200	205
Ile His Ala Arg Arg Tyr Leu Ala Glu Cys Arg Asp Gln Glu Asp Glu			
	210	215	220
Glu Thr Ile Met Pro Ser Pro Thr Phe Ser Glu Leu Gln Lys Met Tyr			
	225	230	235
Gly Lys Asp Lys Phe Tyr Glu Cys Lys Val Cys Lys Glu Thr Phe Leu			
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His Ser Ser Ala Leu Ile Glu His Gln Lys Ile His Gly Arg Gly Asn			
	260	265	270
Ser Asp Asp Arg Asp Asn Glu Arg Glu Arg Glu Arg Asp Arg Leu Arg			
	275	280	285
Ala Arg Ala Arg Glu Gln Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu			
	290	295	300

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 Arg Lys Met Tyr Arg Lys Asp Lys Ile Tyr Glu Cys Lys Val Cys Gly
 325 330 335
 Glu Ser Phe Leu His Leu Ser Ser Leu Arg Glu His Gln Lys Ile His
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 Thr Arg Gly Asn Pro Phe Glu Asn Lys Ser Arg Met Cys Glu Glu Thr
 355 360 365
 Phe Val Pro Ser Gln Ser Leu Arg Gln Lys Thr Tyr Arg Glu Lys Leu
 370 375 380
 Phe Asp Phe Asn Asn Ala Arg Asp Ala Leu Met Gly Asn Ser Asp Ser
 385 390 395 400
 Ser Glu His Gln Lys Asn Arg Ser Arg Arg Asn Phe Phe Glu Gly Arg
 405 410 415
 Gly Phe Glu Lys Pro Phe Val Glu Ser Gln Lys Ser His Thr Ile Thr
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 Arg Pro Pro Glu Asn Lys Asp Asp Asp Lys Pro Phe Thr Ile Ser Val
 435 440 445
 Asn Pro Asn Asp Lys Leu Lys Phe Pro Ile Met Glu Asn Gly Ser Gln
 450 455 460
 Gly Lys Ser Tyr Glu Arg Ser Val Ile His Ser Leu Ala Ser Ala Glu
 465 470 475 480
 Ala Gln Lys Ser His Gly Gly Leu Gly Phe Ser Lys Pro Asp Gln Trp
 485 490 495
 Gln Ser Leu Ala Pro Arg Ala Gln Ala Asp Leu Leu Pro Gln Ser Thr
 500 505 510
 Leu Ser Gly Gly Asn Thr Tyr Lys Gly Lys Glu Tyr Lys Asp Ser Ile
 515 520 525
 Ile His Ser Leu Pro Ala Pro Arg Pro Leu Lys Arg Ile Glu Gln Met

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Thr Ile Phe Asn Val Met Arg Gly Glu Asn Pro Pro Phe Ile Ser Gln		
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Ile Leu Leu Ile Arg Glu Gly Arg Phe Leu Pro Glu Lys Met Leu Met		
565	570	575
Lys Glu Val Ala Ala Ala Thr Thr Thr His Gln Met Tyr Pro Val Leu		
580	585	590
Ser Leu Gln Val Phe Leu Glu Ser Pro Met Thr Leu Ser Arg Met Ser		
595	600	605
Arg Phe Gln Phe Pro Ala Gln Val Phe Val Asn Thr Arg Lys Leu Val		
610	615	620
Pro Lys Arg Ser Thr Leu Ser Pro Gly Thr Thr Arg Pro Leu Leu Ser		
625	630	635 640
Thr Pro Tyr Leu Leu Val Ser Cys Leu Gln Val Thr Val Ala Lys Phe		
645	650	655
Phe Glu Cys Gln Glu Cys Arg Glu Ala Phe Ala Arg Arg Ser Glu Leu		
660	665	670
Ile Glu His Gln Lys Ile His Asp Arg Glu Asp Leu Leu Glu Pro Thr		
675	680	685
Tyr Glu Arg Ser Val Ile Arg Ser Leu Ala Pro Ser Asp Pro Gln Thr		
690	695	700
Ser Tyr Ala Gln Glu Arg Phe Ile Gln Glu Gln Val Arg Lys Phe Arg		
705	710	715 720
Ala Phe Gly Gln Arg Ser Thr Thr Ser Asn Asn Leu Ser Val Gln Lys		
725	730	735
Ile Tyr Ala Gln Glu Thr Phe Asn Ala Glu Glu Pro His Asp Lys Glu		
740	745	750
Thr His Gly Gln Lys Ile His Asp Lys Glu Pro Tyr Gly Lys Glu Pro		
755	760	765

Ser Gly Lys Glu Pro His Gly Asp Glu Pro Gln Asp Lys Glu Pro Leu
 770 775 780
 Asp Gln Glu Met Arg Ser Glu Glu Pro His Asp Asp Lys Pro His Gly
 785 790 795 800
 Gln Glu Pro His Asp Asp Met Arg Pro His Gly Gln Glu Pro His Asp
 805 810 815
 Asp Glu Pro His Gly Gln Glu Pro His Gly Asp Glu Pro His Gly Gln
 820 825 830
 Glu Pro His Gly Asp Glu Pro His Asp Lys Glu Pro Ile Asp Gln Glu
 835 840 845
 Met Arg Ser Glu Glu Pro His Ser Glu Glu Ser His Gly Asp Glu Pro
 850 855 860
 His Gly Glu Glu Ser His Gly Gln Glu Lys Val Glu Asp Ala Thr Ile
 865 870 875 880
 Gln Ala Ser Val Ser Glu Glu His Gln Lys Asp Asp Ala Gly Asp Ala
 885 890 895
 Ile Tyr Glu Cys Gln Asp Cys Gly Leu Gly Phe Thr Asp Leu Asn Asp
 900 905 910
 Leu Thr Ser His Gln Asp Thr His Ser Arg Lys Ala Leu Val Asp Ser
 915 920 925
 Arg Gly Tyr Ala His Ser Glu Val His Ala His Ser Val Ser Glu Phe
 930 935 940
 Glu Lys Lys Cys Ser Gly Glu Lys Leu Tyr Glu Cys Pro Lys Cys Gly
 945 950 955 960
 Glu Ser Phe Ile His Ser Ser Leu Leu Phe Glu His Gln Arg Val His
 965 970 975
 Glu Gln Asp Gln Leu Tyr Ser Val Lys Ala Cys Asp Asp Ala Phe Ile
 980 985 990
 Ala Leu Leu Pro Val Arg Pro Arg Arg Asn Cys Thr Val Glu Arg Asn

995	1000	1005
Pro Ala Val Ser Gly Ser Ala Ile Arg Cys Arg Gln Cys Gly Gln Gly		
1010	1015	1020
Phe Ile His Ser Ser Ala Leu Asn Glu His Met Arg Gln His Arg Asp		
025	1030	1035
		1040
Asn Glu Ile Met Glu Gln Ser Glu Leu Ser Asp Glu Ile Phe Ile Gln		
1045	1050	1055
Gly Leu Ala Leu Thr Glu Tyr Gln Gly Ser Glu Thr Glu Glu Lys Leu		
1060	1065	1070
Phe Glu Cys Thr Ile Cys Gly Glu Cys Phe Phe Thr Ala Lys Gln Leu		
1075	1080	1085
Gly Asp His His Thr Lys Val His Lys Asp Glu Pro Tyr Glu Tyr Gly		
1090	1095	1100
Pro Ser Tyr Thr His Ala Ser Phe Leu Thr Glu Pro Leu Arg Lys His		
1105	1110	1115
		1120
Ile Pro Leu Tyr Glu Cys Lys Asp Cys Gly Gln Ser Phe Leu Asp Asp		
1125	1130	1135
Thr Val Ile Ala Glu Arg Met Val Phe His Pro Glu Arg Glu Gly Gly		
1140	1145	1150
Ser Glu Ile Val Ala Ala Thr Ala Gln Glu Val Glu Ala Asn Val Leu		
1155	1160	1165
Ile Pro Gln Glu Val Leu Arg Ile Gln Gly Ser Asn Ala Glu Ala Ala		
1170	1175	1180
Glu Pro Glu Val Glu Ala Ala Glu Pro Glu Val Glu Ala Ala Glu Pro		
1185	1190	1195
		1200
Glu Val Glu Ala Ala Glu Pro Asn Gly Glu Ala Glu Gly Pro Asp Gly		
1205	1210	1215
Glu Ala Ala Glu Pro Asp Gly Glu Ala Glu Gln Pro Asn Gly Glu Ala		
1220	1225	1230

Glu Gln Gln Thr Val Met Leu Thr Glu Pro Asp Gly Ala Gly Ile Glu
 1235 1240 1245
 Asp Pro Glu Glu Arg Ala Asp Glu Pro Glu Glu Asp Val Glu Glu Pro
 1250 1255 1260
 Glu Gly Asp Ala Asp Glu Pro Asp Gly Ala Asp Ile Glu Asp Pro Glu
 265 1270 1275 1280
 Glu Glu Gly Glu Asp Gln Glu Ile Glu Val Glu Glu Pro Tyr Tyr Asn
 1285 1290 1295
 Cys His Glu Cys Ala Glu Thr Phe Ala Ser Ser Ser Ala Phe Gly Glu
 1300 1305 1310
 His Leu Lys Ser His Ala Ser Val Ile Ile Phe Glu Pro Ala Asn Ala
 1315 1320 1325
 Pro Gly Glu Cys Ser Gly Tyr Ile Glu Arg Ala Ser Thr Ser Ala Gly
 1330 1335 1340
 Gly Ala Glu Gln Ala Asp Asp Lys Tyr Phe Lys Cys Asp Val Cys Gly
 345 1350 1355 1360
 Gln Leu Phe Asn Asp Arg Leu Ser Leu Ala Arg His Gln Asn Ser His
 1365 1370 1375
 Thr Gly

<210> 429

<211> 555

<212> DNA

<213> Mus musculus

<400> 429

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 tatgtccact ctccgccac catccctctg gatgacccca ctctgctctt cgccaacgct 180

ggcatgaacc agtccatacc catcttccta aacacaatcg acccatctca ccctatggcg 240
 aacgtgagca gagctgcca taccagaaa tgcattccgag ctgggggcaa gcacaacgac 300
 ctggatgacg tgggcaagga tgtctaccac cacactttct ttgagatgct gggctcctgg 360
 tcttttgggg actatttcaa ggaattggca tgtaagatgg tcctggaact tcttaccag 420
 gagtttggtg ttccagttgt aagactctat gtcacttact ttggtggtga tgaggcggcg 480
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 agaatcctcc ctgga 555

<210> 430

<211> 439

<212> DNA

<213> Mus musculus

<400> 430

catggtcttg aggcctccga tcactgtgac tgccagcgac acagcagggt tgaagtgtcc 60
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 gtccagagga aagattctgg aatgcattct gggcagcctt tgccatcgtc caggagcagg 180
 agcaggtggc agaagccctg gggatagaga tcattctgac aatgctgttg gttattggctg 240
 tgtgtatggg tgctgtcaat gagaagaaa tgggcccttt agcccatc tccattggct 300
 tctctgtcat tgggacatc ctggcaggtg gtagcatctc tggagcctgc atgaaccctg 360
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<210> 431

<211> 3272

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (952).. (2664)

<400> 431

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 tgtggccagc ggcaccggca gcggagtcca cgcgcggcgg gtcagaccgg gggcgaaggg 180
 gcgggcggcg gtgcggcggg gcaggagcgc acaaaggctt ttccgcccgg gagctccgcg 240
 cctgcgcccc ctccctcacc ccggcctctc cctgctcccc cccaccccca cccccaccg 300
 gccctctcct gcgcgcgccc cgccaccgcg gcgcactcgc ttgcgctccc cctcgcgcac 360
 acacgtggtc ggctcgcagc aaagtttcgc ctgcgatcgc cactcccgga tcctgctgca 420
 gtgttggcgg cggtaacctt gaactttacc agcgcgggtga cacattctcc tcgctttccc 480
 caccgcctgg cctcctgcgc cccctcccc gccttttttt aaaaaagca ttaccacc 540
 caccatcacc ccaatccaac ccacaccgaa cctcgcgcga cccaacccc caacaacaaa 600
 caacaacaac aacaactgca aaacagaaaa caaatccctt aaaccaggcg accagcagcc 660
 tgcaccagcg gcggcagcct cggagagctc ggccggcgcg cggaaccgc aagagggtta 720
 aaagtgtaga ttggatttca ccccgggaaa tctagctcgc cgagtgaact tgaatctttg 780
 gctattttaag gaggactggg ttgtgtgcga agttgcggtg aaccggcgca gtgccccgtc 840
 ctgattgata gcatcgttgg gctcagatga ctgtaaaatg aatagatgaa atccttgctt 900
 ctggaagatt ttcttgggca tctccgggaa agtgcgtttt aaggcgaagt c atg atg 957

Met Met

1

tat tct ccc atc tgt ctc act cag gat gaa ttc cac cca ttt att gag 1005
 Tyr Ser Pro Ile Cys Leu Thr Gln Asp Glu Phe His Pro Phe Ile Glu
 5 10 15
 gca ctt ctt cct cac gtc cgt gca att gcc tat act tgg ttc aac ctg 1053
 Ala Leu Leu Pro His Val Arg Ala Ile Ala Tyr Thr Trp Phe Asn Leu
 20 25 30
 cag gct cga aaa cgc aag tac ttt aaa aag cat gag aaa cga atg tcg 1101

1136/2644 .

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cca agc cac agt gat cct gcc aag aat cct cca ggg tac ctc gag gac 1581
Pro Ser His Ser Asp Pro Ala Lys Asn Pro Pro Gly Tyr Leu Glu Asp
195          200          205          210
agc ttt gta aaa tcc gga gtc ttc aat gta tca gag ctt gtg aga gta 1629
Ser Phe Val Lys Ser Gly Val Phe Asn Val Ser Glu Leu Val Arg Val
          215          220          225
tcc aga aca ccc ata acc cag gga act gga gtc aac ttc cca atc gga 1677
Ser Arg Thr Pro Ile Thr Gln Gly Thr Gly Val Asn Phe Pro Ile Gly
          230          235          240
gaa att ccc agc caa cca tac tat cat gac atg aac tct ggt gtg aac 1725
Glu Ile Pro Ser Gln Pro Tyr Tyr His Asp Met Asn Ser Gly Val Asn
          245          250          255
ctg cag agg tcg ctg tct tct cca ccg agc agc aaa aga ccc aaa act 1773
Leu Gln Arg Ser Leu Ser Ser Pro Pro Ser Ser Lys Arg Pro Lys Thr
          260          265          270
ata tct ata gat gaa aat atg gag cca agt cct aca gga gac ttt tac 1821
Ile Ser Ile Asp Glu Asn Met Glu Pro Ser Pro Thr Gly Asp Phe Tyr
275          280          285          290
ccc tct cca aat tca cca gct gct gga agt cga aca tgg cat gaa cga 1869
Pro Ser Pro Asn Ser Pro Ala Ala Gly Ser Arg Thr Trp His Glu Arg
          295          300          305
gat caa gat atg tct tct cca act aca atg aag aag cct gag aag cca 1917
Asp Gln Asp Met Ser Ser Pro Thr Thr Met Lys Lys Pro Glu Lys Pro
          310          315          320
ctg ttt agc tct aca tct cca cag gat tct tcc cca aga ttg agc act 1965
Leu Phe Ser Ser Thr Ser Pro Gln Asp Ser Ser Pro Arg Leu Ser Thr
          325          330          335
ttc ccc cag cac cat cat ccc gga ata cct gga gtc gcg cac agt gtc 2013
Phe Pro Gln His His His Pro Gly Ile Pro Gly Val Ala His Ser Val

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340	345	350	
atc tca act cga act cca cct ccg ccc tca ccg ttg cca ttt ccg acg	2061		
Ile Ser Thr Arg Thr Pro Pro Pro Pro Ser Pro Leu Pro Phe Pro Thr			
355	360	365	370
caa gct atc ctt cct ccg gca cct tcc agc tac ttc tct cat cca aca	2109		
Gln Ala Ile Leu Pro Pro Ala Pro Ser Ser Tyr Phe Ser His Pro Thr			
375	380	385	
atc aga tat cct cct cac ctg aat cct cag gat act ctg aag aac tac	2157		
Ile Arg Tyr Pro Pro His Leu Asn Pro Gln Asp Thr Leu Lys Asn Tyr			
390	395	400	
gta cct tct tat gac cca tcc agt cct caa acg agc cag cct aac agc	2205		
Val Pro Ser Tyr Asp Pro Ser Ser Pro Gln Thr Ser Gln Pro Asn Ser			
405	410	415	
agt ggt caa gta gta ggg aaa gtg cct ggc cat ttc aca cct gtc ttg	2253		
Ser Gly Gln Val Val Gly Lys Val Pro Gly His Phe Thr Pro Val Leu			
420	425	430	
gca ccc tct ccc cat ccc agt gca gtg cga cct gtg acc ctg acc atg	2301		
Ala Pro Ser Pro His Pro Ser Ala Val Arg Pro Val Thr Leu Thr Met			
435	440	445	450
aca gat act aaa ccc atc act aca tcc act gaa ggt gag gca gct tca	2349		
Thr Asp Thr Lys Pro Ile Thr Thr Ser Thr Glu Gly Glu Ala Ala Ser			
455	460	465	
cct aca gca acc acc tac aca gcc tca ggc aca tct caa gcc aat cga	2397		
Pro Thr Ala Thr Thr Tyr Thr Ala Ser Gly Thr Ser Gln Ala Asn Arg			
470	475	480	
tat gtg gga cta agc cca aga gac cca tcc ttc ctg cat cag caa cag	2445		
Tyr Val Gly Leu Ser Pro Arg Asp Pro Ser Phe Leu His Gln Gln Gln			
485	490	495	
ctg agg att tgt gac tgg acc atg aat caa aac ggc agg cat tta tac	2493		

Leu Arg Ile Cys Asp Trp Thr Met Asn Gln Asn Gly Arg His Leu Tyr
 500 505 510
 ccc agt acc agt gag gat aca ttg gga att act tgg caa agt cct ggt 2541
 Pro Ser Thr Ser Glu Asp Thr Leu Gly Ile Thr Trp Gln Ser Pro Gly
 515 520 525 530
 acc tgg gct agc ttg gtt cct ttt caa gtg tca aat agg aca ccc atc 2589
 Thr Trp Ala Ser Leu Val Pro Phe Gln Val Ser Asn Arg Thr Pro Ile
 535 540 545
 tta ccg gca aat gtc caa aat tat ggt ttg aac ata att gga gag cct 2637
 Leu Pro Ala Asn Val Gln Asn Tyr Gly Leu Asn Ile Ile Gly Glu Pro
 550 555 560
 ttc ctt caa gcg gag aca agc aac tga ggggaaagaa ccacaacat 2684
 Phe Leu Gln Ala Glu Thr Ser Asn
 565 570
 agtataagaa aattagggga aaaacaccca acaaaggaaa agaggaagac tggacaacag 2744
 ggagaaagga gagaaactga agaaagaaga cggtagacca gcattgcagc acttacagtc 2804
 actaattccc ttaagggtga gactatagtg acaggaaagg gtcaatgaca tctcactgat 2864
 gctagactgc agcccctgca ccgtagcctt tgttacatga agtccgctgg gaaatagatg 2924
 ttctgtctct atgacaatat attttaactg actttctaga tgccttaata ttigcatgat 2984
 aagctagttt tcttggttag tattcttggt gtttacgcat ggagtcacta ttcctggtta 3044
 tctcaacaac gaaggctagg aggcggcgctc agagggtgctg gggacagagc catgagccag 3104
 ccattttata agcactctga tttctaanag gtbavaatta tatatatata tatatatata 3164
 tataaaagaa tctctgtagc ctttagttat ccgtacagat ttattaaatt ttggccctta 3224
 acccagcctt ticcagtgtg taaccagtt tgaaatctta aagcttga 3272

<210> 432

<211> 570

<212> PRT

<213> Mus musculus

<400> 432

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 Ile Glu Ala Leu Leu Pro His Val Arg Ala Ile Ala Tyr Thr Trp Phe
 20 25 30
 Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His Glu Lys Arg
 35 40 45
 Met Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu Leu Ser Glu
 50 55 60
 Lys Pro Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala Lys Leu
 65 70 75 80
 Arg Lys Asp Ile Arg Gln Glu Tyr Arg Glu Asp Phe Val Leu Thr Val
 85 90 95
 Thr Gly Lys Lys His Pro Cys Cys Val Leu Ser Asn Pro Asp Gln Lys
 100 105 110
 Gly Lys Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys Val Trp
 115 120 125
 Arg Leu Gly Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro Leu Glu
 130 135 140
 Ser Thr Asp Gly Glu Arg Leu Met Lys Ser Pro His Cys Thr Asn Pro
 145 150 155 160
 Ala Leu Cys Val Gln Pro His His Ile Thr Val Ser Val Lys Glu Leu
 165 170 175
 Asp Leu Phe Leu Ala Tyr Tyr Val Gln Glu Gln Asp Ser Gly Gln Ser
 180 185 190
 Gly Ser Pro Ser His Ser Asp Pro Ala Lys Asn Pro Pro Gly Tyr Leu
 195 200 205
 Glu Asp Ser Phe Val Lys Ser Gly Val Phe Asn Val Ser Glu Leu Val

210	215	220
Arg Val Ser Arg Thr Pro Ile Thr Gln Gly Thr Gly Val Asn Phe Pro		
225	230	235
Ile Gly Glu Ile Pro Ser Gln Pro Tyr Tyr His Asp Met Asn Ser Gly		240
	245	250
Val Asn Leu Gln Arg Ser Leu Ser Ser Pro Pro Ser Ser Lys Arg Pro		255
	260	265
Lys Thr Ile Ser Ile Asp Glu Asn Met Glu Pro Ser Pro Thr Gly Asp		270
	275	280
Phe Tyr Pro Ser Pro Asn Ser Pro Ala Ala Gly Ser Arg Thr Trp His		285
	290	295
Glu Arg Asp Gln Asp Met Ser Ser Pro Thr Thr Met Lys Lys Pro Glu		300
305	310	315
Lys Pro Leu Phe Ser Ser Thr Ser Pro Gln Asp Ser Ser Pro Arg Leu		320
	325	330
Ser Thr Phe Pro Gln His His His Pro Gly Ile Pro Gly Val Ala His		335
	340	345
Ser Val Ile Ser Thr Arg Thr Pro Pro Pro Pro Ser Pro Leu Pro Phe		350
	355	360
Pro Thr Gln Ala Ile Leu Pro Pro Ala Pro Ser Ser Tyr Phe Ser His		365
	370	375
Pro Thr Ile Arg Tyr Pro Pro His Leu Asn Pro Gln Asp Thr Leu Lys		380
385	390	395
Asn Tyr Val Pro Ser Tyr Asp Pro Ser Ser Pro Gln Thr Ser Gln Pro		400
	405	410
Asn Ser Ser Gly Gln Val Val Gly Lys Val Pro Gly His Phe Thr Pro		415
	420	425
Val Leu Ala Pro Ser Pro His Pro Ser Ala Val Arg Pro Val Thr Leu		430
	435	440
		445

Thr Met Thr Asp Thr Lys Pro Ile Thr Thr Ser Thr Glu Gly Glu Ala
 450 455 460
 Ala Ser Pro Thr Ala Thr Thr Tyr Thr Ala Ser Gly Thr Ser Gln Ala
 465 470 475 480
 Asn Arg Tyr Val Gly Leu Ser Pro Arg Asp Pro Ser Phe Leu His Gln
 485 490 495
 Gln Gln Leu Arg Ile Cys Asp Trp Thr Met Asn Gln Asn Gly Arg His
 500 505 510
 Leu Tyr Pro Ser Thr Ser Glu Asp Thr Leu Gly Ile Thr Trp Gln Ser
 515 520 525
 Pro Gly Thr Trp Ala Ser Leu Val Pro Phe Gln Val Ser Asn Arg Thr
 530 535 540
 Pro Ile Leu Pro Ala Asn Val Gln Asn Tyr Gly Leu Asn Ile Ile Gly
 545 550 555 560
 Glu Pro Phe Leu Gln Ala Glu Thr Ser Asn
 565 570

<210> 433

<211> 1907

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (401).. (1693)

<400> 433

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cacgagcacg cgcgcgcccc gagacggcgg actcgcsctg gggatgcaag cgcggaavacc 180
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 agaggcggcg gggggcgggc cgggggaggg tccgcsggcg gggcgggcgg ctccccacgc 300
 gcctccccac ggcctcccc acgcgcctcc ccgccggscg tcgcctcgcc gcacctcccc 360
 acgcgcctcc ccgccggccg tcgcctcgcc gcacagcgcc atg gat gag ttc cac 415

Met Asp Glu Phe His

1

5

ccg ttc atc gag gcg ctg ctg ccg cat gtg cgc gcc ttc gcc tac acc 463
 Pro Phe Ile Glu Ala Leu Leu Pro His Val Arg Ala Phe Ala Tyr Thr

10

15

20

tgg ttc aac ctg cag gcg cgc aag cgc aag tac ttc aag aag cac gag 511
 Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His Glu

25

30

35

aag cgc atg tcc aag gac gag gag cgc gcg gtg aag gat gag ctg ctg 559
 Lys Arg Met Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu Leu

40

45

50

ggt gaa aag gcc gaa gtg aag cag aag tgg gcg tcg cgg ctg ctg gcc 607
 Gly Glu Lys Ala Glu Val Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala

55

60

65

aag ctg cgc aag gac atc cgg ccc gag tgc cgt gaa gac ttc gta ctg 655
 Lys Leu Arg Lys Asp Ile Arg Pro Glu Cys Arg Glu Asp Phe Val Leu

70

75

80

85

gct gtg act ggc aag aag gcg cca ggc tgt gtg ctg tcc aac ccg gac 703
 Ala Val Thr Gly Lys Lys Ala Pro Gly Cys Val Leu Ser Asn Pro Asp

90

95

100

cag aag ggc aag atg cgg cgc atc gac tgc ctg cgc cag gcc gac aaa 751
 Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys

105

110

115

gtg tgg cgt ctg gac ctg gtc atg gtc atc ctg ttc aag ggc atc cca 799

Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro	
120 125 130	
ctg gag agc aca gat ggt gag cgg ctg gtg aag gcg gct gcc tgt gcg	847
Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys Ala Ala Ala Cys Ala	
135 140 145	
cac ccg gtg ctg tgt gtg cag ccg cac cat att ggc gtg gcc gtc aag	895
His Pro Val Leu Cys Val Gln Pro His His Ile Gly Val Ala Val Lys	
150 155 160 165	
gag ctg gac ctg tac ctg gcc tac ttt gtg cgg gag cgc gat gcg gag	943
Glu Leu Asp Leu Tyr Leu Ala Tyr Phe Val Arg Glu Arg Asp Ala Glu	
170 175 180	
cag agc agc agc ccc cgg aca ggt gtg ggc tca gac cag gag gac agc	991
Gln Ser Ser Ser Pro Arg Thr Gly Val Gly Ser Asp Gln Glu Asp Ser	
185 190 195	
aag ccc ata acg ctg gac acc aca gac ttc cag gag agc ttt gtc acg	1039
Lys Pro Ile Thr Leu Asp Thr Thr Asp Phe Gln Glu Ser Phe Val Thr	
200 205 210	
tca ggt gtg ttc agt gtc acg gag ctg atc caa gtg tct cgg aca cct	1087
Ser Gly Val Phe Ser Val Thr Glu Leu Ile Gln Val Ser Arg Thr Pro	
215 220 225	
gtg gtg acc gga acc gga ccc aac ttc tca ctg gga gag ctg cag ggt	1135
Val Val Thr Gly Thr Gly Pro Asn Phe Ser Leu Gly Glu Leu Gln Gly	
230 235 240 245	
cac ctg gca tat gac ctg aac ccg gcc agc gcc ggc atg aga agg act	1183
His Leu Ala Tyr Asp Leu Asn Pro Ala Ser Ala Gly Met Arg Arg Thr	
250 255 260	
cta ccc agc acc tcc tcc agt ggg agc aag cgg cac aag tcg ggc tcg	1231
Leu Pro Ser Thr Ser Ser Ser Gly Ser Lys Arg His Lys Ser Gly Ser	
265 270 275	

atg gaa gag gac gtg gac acg agc ccc ggc ggc gac tac tac acg tcg 1279
 Met Glu Glu Asp Val Asp Thr Ser Pro Gly Gly Asp Tyr Tyr Thr Ser
 280 285 290
 ccc aac tca ccc acg agt agc agc cgc aac tgg acg gaa gac ata gaa 1327
 Pro Asn Ser Pro Thr Ser Ser Ser Arg Asn Trp Thr Glu Asp Ile Glu
 295 300 305
 gga ggc atc tca tcc ccg gtg aag aag aca gag atg gac aaa tct cca 1375
 Gly Gly Ile Ser Ser Pro Val Lys Lys Thr Glu Met Asp Lys Ser Pro
 310 315 320 325
 ttc aac agc ccg tcc ccc cag gac tcc ccc cgg ctc tcc agc ttc aca 1423
 Phe Asn Ser Pro Ser Pro Gln Asp Ser Pro Arg Leu Ser Ser Phe Thr
 330 335 340
 caa cac cac agg ccg gtc atc gcg gta cac agt ggc atc gcg cgg agc 1471
 Gln His His Arg Pro Val Ile Ala Val His Ser Gly Ile Ala Arg Ser
 345 350 355
 ccc cac ccg acc tcg gcc ctg cac ttc cct gcc acg ccc atc ctg cca 1519
 Pro His Pro Thr Ser Ala Leu His Phe Pro Ala Thr Pro Ile Leu Pro
 360 365 370
 cag aca gcc tcc acc tac ttc ccc cat acg gcc atc cgg tac ccg cca 1567
 Gln Thr Ala Ser Thr Tyr Phe Pro His Thr Ala Ile Arg Tyr Pro Pro
 375 380 385
 cat ctc aac ccc cag gac ccg ctc aag gat ctg gtg tcc ctg gcc tgt 1615
 His Leu Asn Pro Gln Asp Pro Leu Lys Asp Leu Val Ser Leu Ala Cys
 390 395 400 405
 gac ccg gcc acc cag cag cct gga ccg cct gct ctc cgc ccg aca cgt 1663
 Asp Pro Ala Thr Gln Gln Pro Gly Pro Pro Ala Leu Arg Pro Thr Arg
 410 415 420
 ccc ctg caa aca gtc cct ttg tgg gat tag gacggaggga tcctcttgcg 1713
 Pro Leu Gln Thr Val Pro Leu Trp Asp

425

430

ggacagtcct ggtacctggg gtagccgagg ttgccttccc atccctcctt catcaccggt 1773
 ggagtcctcag ggtgacagtc ccagcctgca tttttggtgg aaaattagat ggagtgagaa 1833
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<210> 434

<211> 430

<212> PRT

<213> Mus musculus

<400> 434

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 Phe Lys Lys His Glu Lys Arg Met Ser Lys Asp Glu Glu Arg Ala Val
 35 40 45
 Lys Asp Glu Leu Leu Gly Glu Lys Ala Glu Val Lys Gln Lys Trp Ala
 50 55 60
 Ser Arg Leu Leu Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Cys Arg
 65 70 75 80
 Glu Asp Phe Val Leu Ala Val Thr Gly Lys Lys Ala Pro Gly Cys Val
 85 90 95
 Leu Ser Asn Pro Asp Gln Lys Gly Lys Met Arg Arg Ile Asp Cys Leu
 100 105 110
 Arg Gln Ala Asp Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu
 115 120 125
 Phe Lys Gly Ile Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Val Lys

130	135	140
Ala Ala Ala Cys	Ala His Pro Val Leu Cys Val	Gln Pro His His Ile
145	150	155 160
Gly Val Ala Val	Lys Glu Leu Asp Leu Tyr Leu Ala Tyr Phe	Val Arg
165	170	175
Glu Arg Asp Ala	Glu Gln Ser Ser Ser Pro Arg Thr Gly Val Gly Ser	
180	185	190
Asp Gln Glu Asp	Ser Lys Pro Ile Thr Leu Asp Thr Thr Asp Phe Gln	
195	200	205
Glu Ser Phe Val	Thr Ser Gly Val Phe Ser Val Thr Glu Leu Ile Gln	
210	215	220
Val Ser Arg Thr	Pro Val Val Thr Gly Thr Gly Pro Asn Phe Ser Leu	
225	230	235 240
Gly Glu Leu Gln	Gly His Leu Ala Tyr Asp Leu Asn Pro Ala Ser Ala	
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Gly Met Arg Arg	Thr Leu Pro Ser Thr Ser Ser Ser Gly Ser Lys Arg	
260	265	270
His Lys Ser Gly	Ser Met Glu Glu Asp Val Asp Thr Ser Pro Gly Gly	
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Asp Tyr Tyr Thr	Ser Pro Asn Ser Pro Thr Ser Ser Ser Arg Asn Trp	
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Thr Glu Asp Ile	Glu Gly Gly Ile Ser Ser Pro Val Lys Lys Thr Glu	
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Met Asp Lys Ser	Pro Phe Asn Ser Pro Ser Pro Gln Asp Ser Pro Arg	
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Leu Ser Ser Phe	Thr Gln His His Arg Pro Val Ile Ala Val His Ser	
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Gly Ile Ala Arg	Ser Pro His Pro Thr Ser Ala Leu His Phe Pro Ala	
355	360	365

Thr Pro Ile Leu Pro Gln Thr Ala Ser Thr Tyr Phe Pro His Thr Ala
 370 375 380
 Ile Arg Tyr Pro Pro His Leu Asn Pro Gln Asp Pro Leu Lys Asp Leu
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 Val Ser Leu Ala Cys Asp Pro Ala Thr Gln Gln Pro Gly Pro Pro Ala
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<211> 1729

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<213> Mus musculus

<220>

<221> CDS

<222> (317).. (1642)

<400> 435

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 gccgcggggc gggcggggcg cgcgcggcag aggccggagc agcggagccg gagcccagac 240
 gccagcagcg cgacgccgcc tgccgggcct gccctcgccg cggccggcct ccgcgctcgc 300
 gcccggggcg ccagcg atg tac tcc ccg tac tgc ctc acc cag gat gag ttc 352

Met Tyr Ser Pro Tyr Cys Leu Thr Gln Asp Glu Phe

1

5

10

cac ccg ttt atc gag gcg ctg ctg cct cac gtc cga gcc ttc tcc tac 400
 His Pro Phe Ile Glu Ala Leu Leu Pro His Val Arg Ala Phe Ser Tyr

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acc tgg ttc aac ctg cag gcg cgg aag cgc aag tac ttc aag aag cac	448		
Thr Trp Phe Asn Leu Gln Ala Arg Lys Arg Lys Tyr Phe Lys Lys His			
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gag aag cgg atg tca aag gac gag gag cgc gca gtg aag gac gag ctg	496		
Glu Lys Arg Met Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu			
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ctg ggc gag aag cct gag atc aag cag aag tgg gca tcc cgg ctg ttg	544		
Leu Gly Glu Lys Pro Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu			
65	70	75	
gcc aag ctg cgc aaa gac atc cgg ccc gag ttc cgc gag gac ttt gtg	592		
Ala Lys Leu Arg Lys Asp Ile Arg Pro Glu Phe Arg Glu Asp Phe Val			
80	85	90	
cta acc atc acg ggc aag aag ccc ccc tgc tgc gtg ctt tcc aac ccc	640		
Leu Thr Ile Thr Gly Lys Lys Pro Pro Cys Cys Val Leu Ser Asn Pro			
95	100	105	
gac cag aag ggc aag atc cgg cgg att gac tgc ctg cgc cag gct gac	688		
Asp Gln Lys Gly Lys Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp			
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aag gtg tgg cgg ctg gac ctg gtc atg gtg att ttg ttt aaa ggg atc	736		
Lys Val Trp Arg Leu Asp Leu Val Met Val Ile Leu Phe Lys Gly Ile			
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cct ttg gaa agt act gat ggg gag cgg ctc tac aag tcg ccc cag tgc	784		
Pro Leu Glu Ser Thr Asp Gly Glu Arg Leu Tyr Lys Ser Pro Gln Cys			
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Ser Asn Pro Gly Leu Cys Val Gln Pro His His Ile Gly Val Thr Ile			
160	165	170	
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 Gly Gln Ser Asp Ser Ser Asn Gln Gln Gly Asp Ala Asp Ile Lys Pro
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 ctg ccc aac ggg cac tta agt ttc cag gac tgc ttt gtg acg tct ggg 976
 Leu Pro Asn Gly His Leu Ser Phe Gln Asp Cys Phe Val Thr Ser Gly
 205 210 215 220
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 Val Trp Asn Val Thr Glu Leu Val Arg Val Ser Gln Thr Pro Val Ala
 225 230 235
 act gca tca ggg ccc aac ttc tca ctg gcg gac ctg gag agc ccc agc 1072
 Thr Ala Ser Gly Pro Asn Phe Ser Leu Ala Asp Leu Glu Ser Pro Ser
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 Tyr Tyr Asn Ile Asn Gln Val Thr Leu Gly Arg Arg Ser Ile Thr Ser
 255 260 265
 cct cct tcc acc agc agc acc aag cgc ccc aag tcc atc gac gac agt 1168
 Pro Pro Ser Thr Ser Ser Thr Lys Arg Pro Lys Ser Ile Asp Asp Ser
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 Glu Met Glu Ser Pro Val Asp Asp Val Phe Tyr Pro Gly Thr Gly Arg
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 Ser Pro Ala Ala Gly Ser Ser Gln Ser Ser Gly Trp Pro Asn Asp Val
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 Asp Ala Gly Pro Ala Ser Leu Lys Lys Ser Gly Lys Leu Asp Phe Cys
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 His Pro Leu Pro Leu Leu Ala Gly Val Arg Pro Gly Ser Pro Arg Ala
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 Thr Ala Ser Ala Leu His Phe Pro Ser Thr Ser Ile Ile Gln Gln Ser
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 Ser Pro Tyr Phe Thr His Pro Thr Ile Arg Tyr His His His His Gly
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 Gly Gln Ala Thr Gly Gln His Ser Gln Arg Gln Ala Pro Pro Leu Pro
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<212> PRT

<213> Mus musculus

<400> 436

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 Ser Lys Asp Glu Glu Arg Ala Val Lys Asp Glu Leu Leu Gly Glu Lys
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 Pro Glu Ile Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala Lys Leu Arg
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 Lys Asp Ile Arg Pro Glu Phe Arg Glu Asp Phe Val Leu Thr Ile Thr
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 Gly Lys Lys Pro Pro Cys Cys Val Leu Ser Asn Pro Asp Gln Lys Gly
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 Lys Ile Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys Val Trp Arg
 115 120 125
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 130 135 140
 Thr Asp Gly Glu Arg Leu Tyr Lys Ser Pro Gln Cys Ser Asn Pro Gly
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 Leu Tyr Leu Ala Tyr Phe Val His Thr Pro Glu Ser Gly Gln Ser Asp
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 Ser Ser Asn Gln Gln Gly Asp Ala Asp Ile Lys Pro Leu Pro Asn Gly
 195 200 205
 His Leu Ser Phe Gln Asp Cys Phe Val Thr Ser Gly Val Trp Asn Val
 210 215 220

Thr Glu Leu Val Arg Val Ser Gln Thr Pro Val Ala Thr Ala Ser Gly
 225 230 235 240
 Pro Asn Phe Ser Leu Ala Asp Leu Glu Ser Pro Ser Tyr Tyr Asn Ile
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 Asn Gln Val Thr Leu Gly Arg Arg Ser Ile Thr Ser Pro Pro Ser Thr
 260 265 270
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 325 330 335
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 Leu His Phe Pro Ser Thr Ser Ile Ile Gln Gln Ser Ser Pro Tyr Phe
 370 375 380
 Thr His Pro Thr Ile Arg Tyr His His His His Gly Gln Asp Ser Leu
 385 390 395 400
 Lys Glu Phe Val Gln Phe Val Cys Ser Asp Gly Ser Gly Gln Ala Thr
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 Ala Ser Asp Pro Gly Thr Ala Thr Phe
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<211> 5586

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (36).. (2666)

<400> 437

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Leu Glu Lys Thr Val Ser Pro Asp Arg Leu Glu Leu Glu Ala Ala Gln
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aag ttc ctc gag cgt gcg gcc gtg gag aat ctg ccc acg ttc ctt gtg      149
Lys Phe Leu Glu Arg Ala Ala Val Glu Asn Leu Pro Thr Phe Leu Val
          25           30           35
gaa ctg tcc aga gtg ctg gca aac cca gga aac agt cag gtt gcc aga      197
Glu Leu Ser Arg Val Leu Ala Asn Pro Gly Asn Ser Gln Val Ala Arg
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gtt gca gct ggt cta caa att aag aac tct ttg aca tcg aaa gat cca      245
Val Ala Ala Gly Leu Gln Ile Lys Asn Ser Leu Thr Ser Lys Asp Pro
          55           60           65           70
gat atc aag gca caa tac cag cag agg tgg ctc gct att gat gct aat      293
Asp Ile Lys Ala Gln Tyr Gln Gln Arg Trp Leu Ala Ile Asp Ala Asn
          75           80           85
gct cga cgg gaa gtc aag aac tat gtt ttg cag acg ttg ggc aca gaa      341

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Ala Glu Ile Pro Val Ser Gln Trp Pro Glu Leu Ile Pro Gln Leu Val	
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Ala Asn Val Thr Asn Pro Asn Ser Thr Glu His Met Lys Glu Ser Thr	
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Leu Glu Ala Ile Gly Tyr Ile Cys Gln Asp Ile Asp Pro Glu Gln Leu	
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Gln Asp Lys Ser Asn Glu Ile Leu Thr Ala Ile Ile Gln Gly Met Arg	
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Lys Glu Glu Pro Ser Asn Asn Val Lys Leu Ala Ala Thr Asn Ala Leu	
185 190 195	
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Leu Asn Ser Leu Glu Phe Thr Lys Ala Asn Phe Asp Lys Glu Ser Glu	
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Arg His Phe Ile Met Gln Val Val Cys Glu Ala Thr Gln Cys Pro Asp	
215 220 225 230	
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Thr Arg Val Arg Val Ala Ala Leu Gln Asn Leu Val Lys Ile Met Ser	
235 240 245	

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Leu Tyr Tyr Gln Tyr Met Glu Thr Tyr Met Gly Pro Ala Leu Phe Ala	
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Ile Thr Ile Glu Ala Met Lys Ser Asp Ile Asp Glu Val Ala Leu Gln	
265 270 275	
ggg ata gag ttc tgg tcc aat gtc tgt gat gag gaa atg gat ttg gcc	917
Gly Ile Glu Phe Trp Ser Asn Val Cys Asp Glu Glu Met Asp Leu Ala	
280 285 290	
att gag gct tca gag gca gca gag caa gga cgc ccc ccg gag cac acc	965
Ile Glu Ala Ser Glu Ala Ala Glu Gln Gly Arg Pro Pro Glu His Thr	
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Ser Lys Phe Tyr Ala Lys Gly Ala Leu Gln Tyr Leu Val Pro Ile Leu	
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Asn Pro Cys Lys Ala Ala Gly Val Cys Leu Met Leu Leu Ser Thr Cys	
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Cys Glu Asp Asp Ile Val Pro His Val Leu Pro Phe Ile Lys Glu His	
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Ile Lys Asn Pro Asp Trp Arg Tyr Arg Asp Ala Ala Val Val Ala Phe	
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Gly Ser Ile Leu Glu Gly Pro Glu Pro Asn Gln Leu Lys Pro Leu Val	

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Ile Gln Ala Met Pro Thr Leu Ile Glu Leu Met Lys Asp Pro Ser Val			
410	415	420	
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Val Val Arg Asp Thr Thr Ala Trp Thr Val Gly Arg Ile Cys Glu Leu			
425	430	435	
ctg cct gaa gcc gcc atc aac gat gtc tac ctg gca ccc ctt tta cag			1397
Leu Pro Glu Ala Ala Ile Asn Asp Val Tyr Leu Ala Pro Leu Leu Gln			
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Cys Leu Ile Glu Gly Leu Ser Ala Glu Pro Arg Val Ala Ser Asn Val			
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Cys Trp Ala Phe Ser Ser Leu Ala Glu Ala Ala Tyr Glu Ala Ala Asp			
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gta gct gat gat caa gaa gaa cca gcc acc tat tgt ctg tct tct tcc			1541
Val Ala Asp Asp Gln Glu Glu Pro Ala Thr Tyr Cys Leu Ser Ser Ser			
490	495	500	
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Phe Glu Leu Ile Val Gln Lys Leu Leu Glu Thr Thr Asp Arg Pro Asp			
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Gly His Gln Asn Asn Leu Arg Ser Ser Ala Tyr Glu Ser Leu Met Glu			
520	525	530	
atc gta aag aac agt gcc aag gat tgt tac cct gcc gtg cag aag acc			1685
Ile Val Lys Asn Ser Ala Lys Asp Cys Tyr Pro Ala Val Gln Lys Thr			
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acc ctg gtc att atg gaa cgg ctg cag cag gtg ctt cag atg gag tcc			1733

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His Ile Gln Ser Thr Ser Asp Arg Ile Gln Phe Asn Asp Leu Gln Ser	
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585	590
gat gct ctg cag atc tct gat gtg gtc atg gcc tcc ctg tta agg atg	1877
Asp Ala Leu Gln Ile Ser Asp Val Val Met Ala Ser Leu Leu Arg Met	
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Arg Ala Leu Gln Ser Asn Ile Leu Pro Phe Cys Asp Glu Val Met Gln	
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695	700
	705
	710

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775 780 785 790	
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Gln Pro Arg Val Glu Phe Ile Leu Ser Phe Ile Asp His Ile Ala Gly	
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855

860

865

870

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Lys Leu Lys Asn Gln Ala

875

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 tgcccttggc atgccagtct gtgaaggcat taaagacctg ttaaaacact tgagcccaac 5516
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 attttcaacc 5586

<210> 438

<211> 876

<212> PRT

<213> Mus musculus

<400> 438

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 Asn Ser Gln Val Ala Arg Val Ala Ala Gly Leu Gln Ile Lys Asn Ser
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 Gln Thr Leu Gly Thr Glu Thr Tyr Arg Pro Ser Ser Ala Ser Gln Cys
 100 105 110
 Val Ala Gly Ile Ala Cys Ala Glu Ile Pro Val Ser Gln Trp Pro Glu
 115 120 125
 Leu Ile Pro Gln Leu Val Ala Asn Val Thr Asn Pro Asn Ser Thr Glu
 130 135 140
 His Met Lys Glu Ser Thr Leu Glu Ala Ile Gly Tyr Ile Cys Gln Asp
 145 150 155 160
 Ile Asp Pro Glu Gln Leu Gln Asp Lys Ser Asn Glu Ile Leu Thr Ala
 165 170 175
 Ile Ile Gln Gly Met Arg Lys Glu Glu Pro Ser Asn Asn Val Lys Leu
 180 185 190
 Ala Ala Thr Asn Ala Leu Leu Asn Ser Leu Glu Phe Thr Lys Ala Asn
 195 200 205
 Phe Asp Lys Glu Ser Glu Arg His Phe Ile Met Gln Val Val Cys Glu

210	215	220
Ala Thr Gln Cys Pro Asp Thr Arg Val Arg Val Ala Ala Leu Gln Asn		
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Leu Val Lys Ile Met Ser Leu Tyr Tyr Gln Tyr Met Glu Thr Tyr Met		240
	245	250
		255
Gly Pro Ala Leu Phe Ala Ile Thr Ile Glu Ala Met Lys Ser Asp Ile		
	260	265
		270
Asp Glu Val Ala Leu Gln Gly Ile Glu Phe Trp Ser Asn Val Cys Asp		
275	280	285
Glu Glu Met Asp Leu Ala Ile Glu Ala Ser Glu Ala Ala Glu Gln Gly		
290	295	300
Arg Pro Pro Glu His Thr Ser Lys Phe Tyr Ala Lys Gly Ala Leu Gln		
305	310	315
		320
Tyr Leu Val Pro Ile Leu Thr Gln Thr Leu Thr Lys Gln Asp Glu Asn		
	325	330
		335
Asp Asp Asp Asp Asp Trp Asn Pro Cys Lys Ala Ala Gly Val Cys Leu		
	340	345
		350
Met Leu Leu Ser Thr Cys Cys Glu Asp Asp Ile Val Pro His Val Leu		
355	360	365
Pro Phe Ile Lys Glu His Ile Lys Asn Pro Asp Trp Arg Tyr Arg Asp		
370	375	380
Ala Ala Val Val Ala Phe Gly Ser Ile Leu Glu Gly Pro Glu Pro Asn		
385	390	395
		400
Gln Leu Lys Pro Leu Val Ile Gln Ala Met Pro Thr Leu Ile Glu Leu		
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Met Lys Asp Pro Ser Val Val Val Arg Asp Thr Thr Ala Trp Thr Val		
	420	425
		430
Gly Arg Ile Cys Glu Leu Leu Pro Glu Ala Ala Ile Asn Asp Val Tyr		
435	440	445

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 Tyr Cys Leu Ser Ser Ser Phe Glu Leu Ile Val Gln Lys Leu Leu Glu
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 Thr Thr Asp Arg Pro Asp Gly His Gln Asn Asn Leu Arg Ser Ser Ala
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 Val Leu Gln Met Glu Ser His Ile Gln Ser Thr Ser Asp Arg Ile Gln
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 Phe Asn Asp Leu Gln Ser Leu Leu Cys Ala Thr Leu Gln Asn Val Leu
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 Arg Lys Val Gln His Gln Asp Ala Leu Gln Ile Ser Asp Val Val Met
 595 600 605
 Ala Ser Leu Leu Arg Met Phe Gln Ser Thr Ala Gly Ser Gly Gly Val
 610 615 620
 Gln Glu Asp Ala Leu Met Ala Val Ser Thr Leu Val Glu Val Leu Gly
 625 630 635 640
 Gly Glu Phe Leu Lys Tyr Met Glu Ala Phe Lys Pro Phe Leu Gly Ile
 645 650 655
 Gly Leu Lys Asn Tyr Ala Glu Tyr Gln Val Cys Leu Ala Ala Val Gly
 660 665 670
 Leu Val Gly Asp Leu Cys Arg Ala Leu Gln Ser Asn Ile Leu Pro Phe

675	680	685
Cys Asp Glu Val Met Gln Leu Leu Leu Glu Asn Leu Gly Asn Glu Asn		
690	695	700
Val His Arg Ser Val Lys Pro Gln Ile Leu Ser Val Phe Gly Asp Ile		
705	710	715
Ala Leu Ala Ile Gly Gly Glu Phe Lys Lys Tyr Leu Glu Val Val Leu		
725	730	735
Asn Thr Leu Gln Gln Ala Ser Gln Ala Gln Val Asp Lys Ser Asp Phe		
740	745	750
Asp Met Val Asp Tyr Leu Asn Glu Leu Arg Glu Ser Cys Leu Glu Ala		
755	760	765
Tyr Thr Gly Ile Val Gln Gly Leu Lys Gly Asp Gln Glu Asn Val His		
770	775	780
Pro Asp Val Met Leu Val Gln Pro Arg Val Glu Phe Ile Leu Ser Phe		
785	790	795
Ile Asp His Ile Ala Gly Asp Glu Asp His Thr Asp Gly Val Val Ala		
805	810	815
Cys Ala Ala Gly Leu Ile Gly Asp Leu Cys Thr Ala Phe Gly Lys Asp		
820	825	830
Val Leu Lys Leu Val Glu Ala Arg Pro Met Ile His Glu Leu Leu Thr		
835	840	845
Glu Gly Arg Arg Ser Lys Thr Asn Lys Ala Lys Thr Leu Ala Thr Trp		
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865	870	875

<210> 439

<211> 10323

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (356).. (8035)

<400> 439

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 ttgccatat tgacgaggct gtggtaccca aggcctgcgga agctagagtc cgccgggtgga 180
 cgccgcaagc tctttgggta tgcaatggtc tctgcaagat gttttattct tgaattggaa 240
 ccttttacga ctgacaaatg ctggctactt atctcctata agtggactat aatttctttt 300
 cttaagacaa ctacataagc agacaaaatt gcaaaggatc tgccctgtgt cgagt atg 358

Met

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aca gcc acg act cgt ggc tct cca gtt gga ggg aat gac aac cag ggc 406
 Thr Ala Thr Thr Arg Gly Ser Pro Val Gly Gly Asn Asp Asn Gln Gly

5

10

15

caa gcc cct gat gga cag tct cag ccc ccc ctc caa cag aat cag act 454
 Gln Ala Pro Asp Gly Gln Ser Gln Pro Pro Leu Gln Gln Asn Gln Thr

20

25

30

tca tcg cct gat tcg tcc aat gaa aat tcc cct gca act cct cct gat 502
 Ser Ser Pro Asp Ser Ser Asn Glu Asn Ser Pro Ala Thr Pro Pro Asp

35

40

45

gag caa ggt caa ggt gat gct cct cca cag att gaa gat gag gaa cct 550
 Glu Gln Gly Gln Gly Asp Ala Pro Pro Gln Ile Glu Asp Glu Glu Pro

50

55

60

65

gca ttt cca cac act gac ttg cca aag tta gat gat atg atc aac agg 598
 Ala Phe Pro His Thr Asp Leu Pro Lys Leu Asp Asp Met Ile Asn Arg

70	75	80	
cct cga tgg gtt gtt cca gtt ttg ccg aaa ggg gaa tta gaa gtg ctt			646
Pro Arg Trp Val Val Pro Val Leu Pro Lys Gly Glu Leu Glu Val Leu			
85	90	95	
tta gaa gct gct att gat ctt agt aag aaa ggc ctt gat gtt aaa agt			694
Leu Glu Ala Ala Ile Asp Leu Ser Lys Lys Gly Leu Asp Val Lys Ser			
100	105	110	
gaa gca tgt cag cga ttt ttc cga gat ggg cta acg atc tca ttt aca			742
Glu Ala Cys Gln Arg Phe Phe Arg Asp Gly Leu Thr Ile Ser Phe Thr			
115	120	125	
aaa atc ctg aca gat gaa gca gtg agt ggc tgg aag ttt gaa att cac			790
Lys Ile Leu Thr Asp Glu Ala Val Ser Gly Trp Lys Phe Glu Ile His			
130	135	140	145
aga tgc att att aac aat act cat cgc ctg gtg gag cta tgt gtg gct			838
Arg Cys Ile Ile Asn Asn Thr His Arg Leu Val Glu Leu Cys Val Ala			
150	155	160	
aag tta gcc caa gac tgg ttt cca ctt cta gaa ctt ctt gcc atg gcc			886
Lys Leu Ala Gln Asp Trp Phe Pro Leu Leu Glu Leu Leu Ala Met Ala			
165	170	175	
tta aat cct cat tgc aaa ttc cat atc tac aat ggt aca cgt ccc tgc			934
Leu Asn Pro His Cys Lys Phe His Ile Tyr Asn Gly Thr Arg Pro Cys			
180	185	190	
gag tca gtg tcc tca agt gtt cag ttg cct gaa gat gaa ctc ttt gct			982
Glu Ser Val Ser Ser Ser Val Gln Leu Pro Glu Asp Glu Leu Phe Ala			
195	200	205	
cgt tct cca gac cct cga tca cca aaa ggt tgg cta gtg gat ctc ctc			1030
Arg Ser Pro Asp Pro Arg Ser Pro Lys Gly Trp Leu Val Asp Leu Leu			
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aac aag ttt ggc act tta aat gga ttc cag ata ctg cac gat cgt ttt			1078

Asn Lys Phe Gly Thr Leu Asn Gly Phe Gln Ile Leu His Asp Arg Phe	
230	235 240
att aat gga tca gca tta aac gtt cag ata att gca gcc ctt att aaa	1126
Ile Asn Gly Ser Ala Leu Asn Val Gln Ile Ile Ala Ala Leu Ile Lys	
245	250 255
cca ttt gga cag tgc tat gag ttt ctt act ctt cac aca gtg aaa aag	1174
Pro Phe Gly Gln Cys Tyr Glu Phe Leu Thr Leu His Thr Val Lys Lys	
260	265 270
tac ttt ctt cca ata ata gaa atg gtt cca cag ttt tta gaa aac tta	1222
Tyr Phe Leu Pro Ile Ile Glu Met Val Pro Gln Phe Leu Glu Asn Leu	
275	280 285
act gat gaa gag ctg aag aaa gaa gca aag aat gaa gcc aaa aat gat	1270
Thr Asp Glu Glu Leu Lys Lys Glu Ala Lys Asn Glu Ala Lys Asn Asp	
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Ala Leu Ser Met Ile Ile Lys Ser Leu Lys Asn Leu Ala Ser Arg Val	
310	315 320
cct gga caa gaa gaa act gta aaa aac tta gaa ata ttt agg tta aaa	1366
Pro Gly Gln Glu Glu Thr Val Lys Asn Leu Glu Ile Phe Arg Leu Lys	
325	330 335
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340	345 350
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355	360 365
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370	375 380 385

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 Met Ala Glu Trp Ile Gln Gln Asn Asn Ile Leu Ser Ile Val Leu Arg
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 Asp Ser Leu His Gln Pro Gln Tyr Val Glu Lys Leu Glu Lys Ile Leu
 405 410 415
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 Arg Phe Val Ile Lys Glu Lys Ala Leu Thr Leu Gln Asp Leu Asp Asn
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 Ile Trp Ala Ala Gln Ala Gly Lys His Glu Ala Ile Val Lys Asn Val
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 His Asp Leu Leu Ala Lys Leu Ala Trp Asp Phe Ser Pro Glu Gln Leu
 450 455 460 465
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 Asp His Leu Phe Asp Cys Phe Lys Ala Ser Trp Thr Asn Ala Ser Lys
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 Lys Gln Arg Glu Lys Leu Leu Glu Leu Ile Arg Arg Leu Ala Glu Asp
 485 490 495
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 Asp Lys Asp Gly Val Met Ala His Lys Val Leu Asn Leu Leu Trp Asn
 500 505 510
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 Leu Ala His Ser Asp Asp Val Pro Val Asp Ile Met Asp Leu Ala Leu
 515 520 525
 agt gct cac atc aaa ata cta gat tat agt tgc tcc cag gac cgg gac 1990
 Ser Ala His Ile Lys Ile Leu Asp Tyr Ser Cys Ser Gln Asp Arg Asp

530	535	540	545	
acc caa aag atc cag tgg att gat cgc ttc ata gaa gaa ctt cgc aca				2038
Thr Gln Lys Ile Gln Trp Ile Asp Arg Phe Ile Glu Glu Leu Arg Thr				
	550	555	560	
aat gac aaa tgg gtc att cct gca ctg aaa caa att aga gaa att tgt				2086
Asn Asp Lys Trp Val Ile Pro Ala Leu Lys Gln Ile Arg Glu Ile Cys				
	565	570	575	
agt ttg ttt ggt gaa gca cct caa aat ttg agt caa agt cag cga agt				2134
Ser Leu Phe Gly Glu Ala Pro Gln Asn Leu Ser Gln Ser Gln Arg Ser				
	580	585	590	
ccc cat gta ttt tat cgc cat gac tta atc aat caa ctt cag cac aat				2182
Pro His Val Phe Tyr Arg His Asp Leu Ile Asn Gln Leu Gln His Asn				
	595	600	605	
cat gcc cta gtt act ttg gta gca gaa aac ctt gca act tac atg gaa				2230
His Ala Leu Val Thr Leu Val Ala Glu Asn Leu Ala Thr Tyr Met Glu				
610	615	620	625	
agc atg aga atg tat ggc aga gac aat gaa gac tat gac cca caa act				2278
Ser Met Arg Met Tyr Gly Arg Asp Asn Glu Asp Tyr Asp Pro Gln Thr				
	630	635	640	
gtg aga ctg gga agt aga tat agt cat gtt caa gaa gtc caa gaa cgg				2326
Val Arg Leu Gly Ser Arg Tyr Ser His Val Gln Glu Val Gln Glu Arg				
	645	650	655	
ctt aac ttt ctt agg ttt tta ttg aag gat ggc cag ctg tgg ctg tgt				2374
Leu Asn Phe Leu Arg Phe Leu Leu Lys Asp Gly Gln Leu Trp Leu Cys				
	660	665	670	
gct cca cag gca aaa caa ata tgg aag tgc tta gca gag aat gcg gtt				2422
Ala Pro Gln Ala Lys Gln Ile Trp Lys Cys Leu Ala Glu Asn Ala Val				
	675	680	685	
tat ctt tgt gat cgt gaa gcc tgt ttt aag tgg tat tcc aaa tta atg				2470

Tyr Leu Cys Asp Arg Glu Ala Cys Phe Lys Trp Tyr Ser Lys Leu Met	
690	705
gga gac gaa cct gac tta gat cct gat atc aat aag gac ttc ttt gaa	2518
Gly Asp Glu Pro Asp Leu Asp Pro Asp Ile Asn Lys Asp Phe Phe Glu	
710	720
agt aat gtg ctt cag ctt gat cct tcc ctg tta act gaa aat ggg atg	2566
Ser Asn Val Leu Gln Leu Asp Pro Ser Leu Leu Thr Glu Asn Gly Met	
725	735
aag tgt ttt gag aga ttc ttc aaa gct gtg aat tgt cga gaa gga aaa	2614
Lys Cys Phe Glu Arg Phe Phe Lys Ala Val Asn Cys Arg Glu Gly Lys	
740	750
cta gta gca aaa aga aga gcc tac atg atg gat gat ttg gaa ttg ata	2662
Leu Val Ala Lys Arg Arg Ala Tyr Met Met Asp Asp Leu Glu Leu Ile	
755	765
gga tta gac tat ctt tgg aga gtt gta att cag agt aat gat gat att	2710
Gly Leu Asp Tyr Leu Trp Arg Val Val Ile Gln Ser Asn Asp Asp Ile	
770	785
gcc tgc cga gct att gat ctc ctt aaa gag ata tac aca aac ctt ggt	2758
Ala Cys Arg Ala Ile Asp Leu Leu Lys Glu Ile Tyr Thr Asn Leu Gly	
790	800
cca agg ctg cag gtc aat cag gtg gtg atc cat gaa gac ttc att cag	2806
Pro Arg Leu Gln Val Asn Gln Val Val Ile His Glu Asp Phe Ile Gln	
805	815
tct tgc ttt gat cgt ttg aaa gcc tct tat gac aca ttg tgt gtt ttg	2854
Ser Cys Phe Asp Arg Leu Lys Ala Ser Tyr Asp Thr Leu Cys Val Leu	
820	830
gat ggt gac aaa gac agt att aat tgt gca aga cag gaa gct gtt cga	2902
Asp Gly Asp Lys Asp Ser Ile Asn Cys Ala Arg Gln Glu Ala Val Arg	
835	845

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Met Val Arg Val Leu Thr Val Leu Arg Glu Tyr Ile Asn Glu Cys Asp	
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agt gat tat cat gaa gaa aga aca att ttg cct atg tca aga gct ttc	2998
Ser Asp Tyr His Glu Glu Arg Thr Ile Leu Pro Met Ser Arg Ala Phe	
870 875 880	
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Arg Gly Lys His Leu Ser Phe Ile Val Arg Phe Pro Asn Gln Gly Arg	
885 890 895	
caa gta gat gac ttg gag gtt tgg tct cat aca aat gat acc att ggt	3094
Gln Val Asp Asp Leu Glu Val Trp Ser His Thr Asn Asp Thr Ile Gly	
900 905 910	
tca gtt cga aga tgt ata ctc aat cgt att aaa gcc aat gta gct cat	3142
Ser Val Arg Arg Cys Ile Leu Asn Arg Ile Lys Ala Asn Val Ala His	
915 920 925	
aca aaa att gaa ctc ttt gtg ggt ggt gag ctt att gat cct gga gat	3190
Thr Lys Ile Glu Leu Phe Val Gly Gly Glu Leu Ile Asp Pro Gly Asp	
930 935 940 945	
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Asp Arg Lys Leu Ile Gly Gln Leu Asn Leu Lys Asp Lys Ser Leu Ile	
950 955 960	
aca gcc aaa ctt aca caa ata agc tcc aat atg cct tca agt cct gat	3286
Thr Ala Lys Leu Thr Gln Ile Ser Ser Asn Met Pro Ser Ser Pro Asp	
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agc tcc tct gat tcc tca act gga tct cct gga aat cat ggt aat cat	3334
Ser Ser Ser Asp Ser Ser Thr Gly Ser Pro Gly Asn His Gly Asn His	
980 985 990	
tac agt gat ggc ccc aat cca gaa gtg gaa agt tgt ttg cct gga gtg	3382
Tyr Ser Asp Gly Pro Asn Pro Glu Val Glu Ser Cys Leu Pro Gly Val	

995	1000	1005	
ata atg tca ctt cat ccc aga tac atc tct ttc ctt tgg caa gtt gca			3430
Ile Met Ser Leu His Pro Arg Tyr Ile Ser Phe Leu Trp Gln Val Ala			
1010	1015	1020	1025
gac tta ggg agc agc cta aat atg cca cct ctt aga gat gga gca aga			3478
Asp Leu Gly Ser Ser Leu Asn Met Pro Pro Leu Arg Asp Gly Ala Arg			
	1030	1035	1040
gtg ctt atg aaa ctt atg ccg cca gat agt acg aca ata gaa aag tta			3526
Val Leu Met Lys Leu Met Pro Pro Asp Ser Thr Thr Ile Glu Lys Leu			
	1045	1050	1055
aga gct att tgt ttg gac cat gcc aaa ctt gga gaa agc agc ctt agt			3574
Arg Ala Ile Cys Leu Asp His Ala Lys Leu Gly Glu Ser Ser Leu Ser			
	1060	1065	1070
cca tct ctt gac tca ctt ttc ttt ggt cct tca gcc tca caa gtg cta			3622
Pro Ser Leu Asp Ser Leu Phe Phe Gly Pro Ser Ala Ser Gln Val Leu			
	1075	1080	1085
tac cta aca gag gta gtc tat gcc ttg tta atg ccc gct ggt gca ccc			3670
Tyr Leu Thr Glu Val Val Tyr Ala Leu Leu Met Pro Ala Gly Ala Pro			
1090	1095	1100	1105
ttg act gat gat tcc tcg gat ttt cag ttt cac ttc ttg aaa agt ggt			3718
Leu Thr Asp Asp Ser Ser Asp Phe Gln Phe His Phe Leu Lys Ser Gly			
	1110	1115	1120
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Gly Leu Pro Leu Val Leu Ser Met Leu Thr Arg Asn Asn Phe Leu Pro			
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Asn Ala Asp Met Glu Thr Arg Arg Gly Ala Tyr Leu Asn Ala Leu Lys			
	1140	1145	1150
ata gcc aaa ctg tta cta act gcc att ggc tat ggc cat gtt cgt gct			3862

Ile Ala Lys Leu Leu Leu Thr Ala Ile Gly Tyr Gly His Val Arg Ala
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 Val Ala Glu Ala Cys Gln Pro Gly Val Glu Gly Val Asn Pro Met Thr
 1170 1175 1180 1185
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 1190 1195 1200
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 Leu Gln Ser Ile Pro Asn Pro Ser Ser Glu Cys Met Leu Arg Asn Val
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 Ser Val Arg Leu Ala Gln Gln Ile Ser Asp Glu Ala Ser Arg Tyr Met
 1220 1225 1230
 cct gat att tgt gta att aga gct ata cac caa att att tgg aca tca 4102
 Pro Asp Ile Cys Val Ile Arg Ala Ile His Gln Ile Ile Trp Thr Ser
 1235 1240 1245
 gga tgt gga gga tta cag ctg gta ttc agc cca aat gaa gaa gtg aca 4150
 Gly Cys Gly Gly Leu Gln Leu Val Phe Ser Pro Asn Glu Glu Val Thr
 1250 1255 1260 1265
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 Lys Ile Tyr Glu Lys Thr Asn Ala Gly Asn Glu Pro Asp Leu Glu Asp
 1270 1275 1280
 gaa cag gtt tgc tgt gaa gca ttg gag gtg atg aca ctg tgt ttc gcc 4246
 Glu Gln Val Cys Cys Glu Ala Leu Glu Val Met Thr Leu Cys Phe Ala
 1285 1290 1295
 ttg att cca aca gcc tta gat gct cta agt aaa gaa aaa gct tgg cag 4294
 Leu Ile Pro Thr Ala Leu Asp Ala Leu Ser Lys Glu Lys Ala Trp Gln
 1300 1305 1310

aca ttt att att gac tta ctg ttg cac tgt cac agc aaa act gtt cgt 4342
 Thr Phe Ile Ile Asp Leu Leu Leu His Cys His Ser Lys Thr Val Arg
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 caa gtg gca cag gaa caa ttc ttc tta atg tgc acc aga tgt tgc atg 4390
 Gln Val Ala Gln Glu Gln Phe Phe Leu Met Cys Thr Arg Cys Cys Met
 1330 1335 1340 1345
 ggg cac agg cct cta ctt ttc ttc att acg ctg ctc ttt act gtt ttg 4438
 Gly His Arg Pro Leu Leu Phe Phe Ile Thr Leu Leu Phe Thr Val Leu
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 ggg agc aca gcc aga gag agg gct aaa cac tca ggc gac tac ttt act 4486
 Gly Ser Thr Ala Arg Glu Arg Ala Lys His Ser Gly Asp Tyr Phe Thr
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 ctt tta aga cat ctt ctt aat tac gcc tac aac agt aac att aat gtg 4534
 Leu Leu Arg His Leu Leu Asn Tyr Ala Tyr Asn Ser Asn Ile Asn Val
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 ccc aat gct gaa gtt ctt cta aat aat gaa att gat tgg ctt aaa aga 4582
 Pro Asn Ala Glu Val Leu Leu Asn Asn Glu Ile Asp Trp Leu Lys Arg
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 att agg gat gat gtt aaa agg aca ggt gaa aca ggt gtt gag gag aca 4630
 Ile Arg Asp Asp Val Lys Arg Thr Gly Glu Thr Gly Val Glu Glu Thr
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 atc tta gaa gga cac ctt ggg gtt aca aag gag cta ctg gct ttt cag 4678
 Ile Leu Glu Gly His Leu Gly Val Thr Lys Glu Leu Leu Ala Phe Gln
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 act cct gag aaa aag ttt cat att ggt tgt gaa aag gga ggt gct aat 4726
 Thr Pro Glu Lys Lys Phe His Ile Gly Cys Glu Lys Gly Gly Ala Asn
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 ctc att aaa gaa tta atc gac gac ttc atc ttt ccc gca tcc aat gtt 4774
 Leu Ile Lys Glu Leu Ile Asp Asp Phe Ile Phe Pro Ala Ser Asn Val

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tac ctg cag tat atg aga aat gga gaa ctc cct gct gag cag gcc att			4822
Tyr Leu Gln Tyr Met Arg Asn Gly Glu Leu Pro Ala Glu Gln Ala Ile			
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cct gtg tgt ggt tca cca gcc aca att aat gct ggt ttt gag tta ctt			4870
Pro Val Cys Gly Ser Pro Ala Thr Ile Asn Ala Gly Phe Glu Leu Leu			
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gtg gca tta gct gtt ggc tgt gtg agg aac ctc aaa cag ata gta gat			4918
Val Ala Leu Ala Val Gly Cys Val Arg Asn Leu Lys Gln Ile Val Asp			
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Ser Leu Thr Glu Met Tyr Tyr Ile Gly Thr Ala Ile Thr Thr Cys Glu			
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gca ctt act gag tgg gaa tac ctg cca ccc gtt gga ccc cgt cca cca			5014
Ala Leu Thr Glu Trp Glu Tyr Leu Pro Pro Val Gly Pro Arg Pro Pro			
1540	1545	1550	
aaa gga ttt gtg ggg ctg aaa aat gct ggt gct act tgt tac atg aac			5062
Lys Gly Phe Val Gly Leu Lys Asn Ala Gly Ala Thr Cys Tyr Met Asn			
1555	1560	1565	
tct gtg atc cag caa ctc tat atg atc ccc tct atc agg aat ggt att			5110
Ser Val Ile Gln Gln Leu Tyr Met Ile Pro Ser Ile Arg Asn Gly Ile			
1570	1575	1580	1585
ctt gcc ata gaa ggc aca ggt agt gat gta gat gat gat atg tct ggg			5158
Leu Ala Ile Glu Gly Thr Gly Ser Asp Val Asp Asp Asp Met Ser Gly			
1590	1595	1600	
gat gag aag cag gac aac gag agc aat gtt gat ccc agg gat gat gtg			5206
Asp Glu Lys Gln Asp Asn Glu Ser Asn Val Asp Pro Arg Asp Asp Val			
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Phe Gly Tyr Pro Gln Gln Phe Glu Asn Lys Pro Pro Leu Ile Lys Thr
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 gaa aat agg aaa aag tac aat att ggt gtc cta aaa cac ctt cag gtt 5302
 Glu Asn Arg Lys Lys Tyr Asn Ile Gly Val Leu Lys His Leu Gln Val
 1635 1640 1645
 atc ttt ggc cat tta gct gct tct cga cta cag tac tat gtg cct aaa 5350
 Ile Phe Gly His Leu Ala Ala Ser Arg Leu Gln Tyr Tyr Val Pro Lys
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 Gly Phe Trp Lys Gln Ser Arg Leu Trp Gly Glu Pro Val Asn Leu Arg
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 Asp Glu Ala Leu Lys Ala Leu Gly His Pro Ala Met Leu Ser Lys Val
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 ttg gga ggt tcc ttt gct gat cag aaa att tgc caa ggc tgc cca cat 5542
 Leu Gly Gly Ser Phe Ala Asp Gln Lys Ile Cys Gln Gly Cys Pro His
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 Arg Tyr Glu Cys Glu Glu Ser Phe Thr Thr Leu Asn Val Asp Ile Arg
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 Asn His Gln Asn Leu Leu Asp Ser Leu Glu Gln Tyr Val Lys Gly Asp
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 Leu Leu Glu Gly Ala Asn Ala Tyr His Cys Glu Lys Cys Asn Lys Lys
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Val Asp Thr Val Lys Arg Leu Leu Ile Lys Lys Leu Pro Pro Val Leu	
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gct atc caa cta aaa cga ttc gat tat gac tgg gaa aga gaa tgt gca	5782
Ala Ile Gln Leu Lys Arg Phe Asp Tyr Asp Trp Glu Arg Glu Cys Ala	
1795 1800 1805	
atc aag ttc aat gat tac ttt gaa ttt cct cga gag tta gac atg gaa	5830
Ile Lys Phe Asn Asp Tyr Phe Glu Phe Pro Arg Glu Leu Asp Met Glu	
1810 1815 1820 1825	
cct tac aca gtg gca ggt gtt gct aaa ctg gag gga gat aat gtc aac	5878
Pro Tyr Thr Val Ala Gly Val Ala Lys Leu Glu Gly Asp Asn Val Asn	
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cca gaa agt cag ctg ata caa cag aat gag cag tct gaa agc gag aaa	5926
Pro Glu Ser Gln Leu Ile Gln Gln Asn Glu Gln Ser Glu Ser Glu Lys	
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Ala Gly Ser Thr Lys Tyr Arg Leu Val Gly Val Leu Val His Ser Gly	
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Gln Ala Ser Gly Gly His Tyr Tyr Ser Tyr Ile Ile Gln Arg Asn Gly	
1875 1880 1885	
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Gly Asp Gly Glu Lys Asn Arg Trp Tyr Lys Phe Asp Asp Gly Asp Val	
1890 1895 1900 1905	
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Thr Glu Cys Lys Met Asp Asp Asp Glu Glu Met Lys Thr Gln Cys Phe	
1910 1915 1920	
ggg gga gag tac atg gga gaa gta ttg gat cac atg atg aaa cgc atg	6166
Gly Gly Glu Tyr Met Gly Glu Val Leu Asp His Met Met Lys Arg Met	

1925	1930	1935	
tcg tac agg cgt cag aaa aga tgg tgg aat gca tat ata ctt ttt tat			6214
Ser Tyr Arg Arg Gln Lys Arg Trp Trp Asn Ala Tyr Ile Leu Phe Tyr			
1940	1945	1950	
gaa cga atg gac aca ata ggt cat gat gat gag gtg ata aga tac ata			6262
Glu Arg Met Asp Thr Ile Gly His Asp Asp Glu Val Ile Arg Tyr Ile			
1955	1960	1965	
tca gag att gct atc acc aca agg ccc cat cag att gtc atg cca tcc			6310
Ser Glu Ile Ala Ile Thr Thr Arg Pro His Gln Ile Val Met Pro Ser			
1970	1975	1980	1985
gcc att gaa aga agt gtt cgg aag cag aat gtt cag ttc atg cac aac			6358
Ala Ile Glu Arg Ser Val Arg Lys Gln Asn Val Gln Phe Met His Asn			
1990	1995	2000	
cga atg cag tac agt ctg gaa tat ttt cag ttt atg aaa aag cta ctg			6406
Arg Met Gln Tyr Ser Leu Glu Tyr Phe Gln Phe Met Lys Lys Leu Leu			
2005	2010	2015	
aca tgt aat ggt gtt tac tta aac cct cct cca ggg caa gat cac ctg			6454
Thr Cys Asn Gly Val Tyr Leu Asn Pro Pro Pro Gly Gln Asp His Leu			
2020	2025	2030	
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Ser Pro Glu Ala Glu Glu Ile Thr Met Ile Ser Ile Gln Leu Ala Ala			
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Arg Phe Leu Phe Thr Thr Gly Phe His Thr Lys Lys Ile Val Arg Gly			
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tct gcc agt gat tgg tat gat gca ttg tgt att ctc ctg cgt cac agc			6598
Ser Ala Ser Asp Trp Tyr Asp Ala Leu Cys Ile Leu Leu Arg His Ser			
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Lys Asn Val Arg Phe Trp Phe Ala His Asn Val Leu Phe Asn Val Ser
 2085 2090 2095
 aat cga ttc tct gag tac ctt ttg gaa tgc cct agt gca gaa gtg aga 6694
 Asn Arg Phe Ser Glu Tyr Leu Leu Glu Cys Pro Ser Ala Glu Val Arg
 2100 2105 2110
 ggt gca ttt gca aag ctc ata gtt ttc att gca cat ttt tcc tta caa 6742
 Gly Ala Phe Ala Lys Leu Ile Val Phe Ile Ala His Phe Ser Leu Gln
 2115 2120 2125
 gac ggg cct tgt cct tca cct ttt gca tct cct gga cct tct agt cag 6790
 Asp Gly Pro Cys Pro Ser Pro Phe Ala Ser Pro Gly Pro Ser Ser Gln
 2130 2135 2140 2145
 gct tat gac aac tta agt ttg agt gac cac tta cta aga gca gta cta 6838
 Ala Tyr Asp Asn Leu Ser Leu Ser Asp His Leu Leu Arg Ala Val Leu
 2150 2155 2160
 aat ctc ttg cgg agg gag gtt tca gag cat gga cgt cat tta cag cag 6886
 Asn Leu Leu Arg Arg Glu Val Ser Glu His Gly Arg His Leu Gln Gln
 2165 2170 2175
 tat ttc aac ttg ttc gta atg tat gcc aat tta gga gtg gca gag aaa 6934
 Tyr Phe Asn Leu Phe Val Met Tyr Ala Asn Leu Gly Val Ala Glu Lys
 2180 2185 2190
 aca cag ctg ctc aaa ctg agt gta cct gct acc ttt atg ctt gtg tcc 6982
 Thr Gln Leu Leu Lys Leu Ser Val Pro Ala Thr Phe Met Leu Val Ser
 2195 2200 2205
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 Leu Asp Glu Gly Pro Gly Pro Pro Ile Lys Tyr Gln Tyr Ala Glu Leu
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Ser Ser Arg Met Gln Ser Ser Ile Asn Gly Asn Pro Ser Leu Pro Asn	
2245 2250 2255	
cct ttt ggt gat cct aac tta tca caa cct ata atg cca att caa caa	7174
Pro Phe Gly Asp Pro Asn Leu Ser Gln Pro Ile Met Pro Ile Gln Gln	
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aat gtg gta gac att tta ttt gtg aga aca agt tat gtg aag aaa att	7222
Asn Val Val Asp Ile Leu Phe Val Arg Thr Ser Tyr Val Lys Lys Ile	
2275 2280 2285	
att gaa gac tgc agt aac tct gat gag acc gtc aaa ttg ctt cgc ttt	7270
Ile Glu Asp Cys Ser Asn Ser Asp Glu Thr Val Lys Leu Leu Arg Phe	
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Cys Cys Trp Glu Asn Pro Gln Phe Ser Ser Thr Val Leu Ser Glu Leu	
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Leu Trp Gln Val Ala Tyr Ser Tyr Thr Tyr Glu Leu Arg Pro Tyr Leu	
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Arg Ile His Asn Ala Leu Lys Gly Ile Pro Asp Asp Arg Asp Gly Leu	
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Phe Asp Thr Ile Gln Arg Ser Lys Asn His Tyr Gln Lys Arg Ala Tyr	
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cag tgt ata aaa tgt atg gta gcc ctc ttt agc agt tgt cct gtt gct	7558
Gln Cys Ile Lys Cys Met Val Ala Leu Phe Ser Ser Cys Pro Val Ala	

2390	2395	2400	
tac caa atc ctg cag ggc aat gga gat ctt aaa agg aaa tgg acc tgg			7606
Tyr Gln Ile Leu Gln Gly Asn Gly Asp Leu Lys Arg Lys Trp Thr Trp			
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Ala Val Glu Trp Leu Gly Asp Glu Leu Glu Arg Arg Pro Tyr Thr Gly			
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Asn Pro Gln Tyr Thr Tyr Asn Asn Trp Ser Pro Pro Val Gln Ser Asn			
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Glu Thr Ser Asn Gly Tyr Phe Leu Glu Arg Ser His Ser Ala Arg Met			
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aca ctt gca aaa gct tgt gaa ctc tgt cct gag gag gaa cca gat gac			7798
Thr Leu Ala Lys Ala Cys Glu Leu Cys Pro Glu Glu Glu Pro Asp Asp			
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Gln Asp Ala Pro Asp Glu His Glu Ser Pro Pro Pro Glu Asp Ala Pro			
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Leu Tyr Pro His Ser Pro Gly Ser Gln Tyr Gln Gln Asn Asn His Val			
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His Gly Gln Pro Tyr Thr Gly Pro Ala Ala His His Met Asn Asn Pro			
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Gln Arg Thr Gly Gln Arg Ala Gln Glu Asn Tyr Glu Gly Gly Glu Glu			
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Val Ser Pro Pro Gln Thr Lys Gly Ser Val Lys Cys Thr Tyr

2550

2555

2560

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Asp	Glu	Gln	Gly	Gln	Gly	Asp	Ala	Pro	Pro	Gln	Ile	Glu	Asp	Glu	Glu
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Pro	Ala	Phe	Pro	His	Thr	Asp	Leu	Pro	Lys	Leu	Asp	Asp	Met	Ile	Asn
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 Leu Leu Glu Ala Ala Ile Asp Leu Ser Lys Lys Gly Leu Asp Val Lys
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 130 135 140
 His Arg Cys Ile Ile Asn Asn Thr His Arg Leu Val Glu Leu Cys Val
 145 150 155 160
 Ala Lys Leu Ala Gln Asp Trp Phe Pro Leu Leu Glu Leu Leu Ala Met
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 Ala Leu Asn Pro His Cys Lys Phe His Ile Tyr Asn Gly Thr Arg Pro
 180 185 190
 Cys Glu Ser Val Ser Ser Ser Val Gln Leu Pro Glu Asp Glu Leu Phe
 195 200 205
 Ala Arg Ser Pro Asp Pro Arg Ser Pro Lys Gly Trp Leu Val Asp Leu
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 Leu Asn Lys Phe Gly Thr Leu Asn Gly Phe Gln Ile Leu His Asp Arg
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 Phe Ile Asn Gly Ser Ala Leu Asn Val Gln Ile Ile Ala Ala Leu Ile
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 Lys Pro Phe Gly Gln Cys Tyr Glu Phe Leu Thr Leu His Thr Val Lys
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 Lys Tyr Phe Leu Pro Ile Ile Glu Met Val Pro Gln Phe Leu Glu Asn
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 Asn Ile Trp Ala Ala Gln Ala Gly Lys His Glu Ala Ile Val Lys Asn
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 Val His Asp Leu Leu Ala Lys Leu Ala Trp Asp Phe Ser Pro Glu Gln
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 Val Tyr Leu Cys Asp Arg Glu Ala Cys Phe Lys Trp Tyr Ser Lys Leu
 690 695 700
 Met Gly Asp Glu Pro Asp Leu Asp Pro Asp Ile Asn Lys Asp Phe Phe
 705 710 715 720
 Glu Ser Asn Val Leu Gln Leu Asp Pro Ser Leu Leu Thr Glu Asn Gly
 725 730 735
 Met Lys Cys Phe Glu Arg Phe Phe Lys Ala Val Asn Cys Arg Glu Gly
 740 745 750
 Lys Leu Val Ala Lys Arg Arg Ala Tyr Met Met Asp Asp Leu Glu Leu
 755 760 765
 Ile Gly Leu Asp Tyr Leu Trp Arg Val Val Ile Gln Ser Asn Asp Asp

770 775 780
 Ile Ala Cys Arg Ala Ile Asp Leu Leu Lys Glu Ile Tyr Thr Asn Leu
 785 790 795 800
 Gly Pro Arg Leu Gln Val Asn Gln Val Val Ile His Glu Asp Phe Ile
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 Gln Ser Cys Phe Asp Arg Leu Lys Ala Ser Tyr Asp Thr Leu Cys Val
 820 825 830
 Leu Asp Gly Asp Lys Asp Ser Ile Asn Cys Ala Arg Gln Glu Ala Val
 835 840 845
 Arg Met Val Arg Val Leu Thr Val Leu Arg Glu Tyr Ile Asn Glu Cys
 850 855 860
 Asp Ser Asp Tyr His Glu Glu Arg Thr Ile Leu Pro Met Ser Arg Ala
 865 870 875 880
 Phe Arg Gly Lys His Leu Ser Phe Ile Val Arg Phe Pro Asn Gln Gly
 885 890 895
 Arg Gln Val Asp Asp Leu Glu Val Trp Ser His Thr Asn Asp Thr Ile
 900 905 910
 Gly Ser Val Arg Arg Cys Ile Leu Asn Arg Ile Lys Ala Asn Val Ala
 915 920 925
 His Thr Lys Ile Glu Leu Phe Val Gly Gly Glu Leu Ile Asp Pro Gly
 930 935 940
 Asp Asp Arg Lys Leu Ile Gly Gln Leu Asn Leu Lys Asp Lys Ser Leu
 945 950 955 960
 Ile Thr Ala Lys Leu Thr Gln Ile Ser Ser Asn Met Pro Ser Ser Pro
 965 970 975
 Asp Ser Ser Ser Asp Ser Ser Thr Gly Ser Pro Gly Asn His Gly Asn
 980 985 990
 His Tyr Ser Asp Gly Pro Asn Pro Glu Val Glu Ser Cys Leu Pro Gly
 995 1000 1005

Val Ile Met Ser Leu His Pro Arg Tyr Ile Ser Phe Leu Trp Gln Val
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 Ala Asp Leu Gly Ser Ser Leu Asn Met Pro Pro Leu Arg Asp Gly Ala
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 Arg Val Leu Met Lys Leu Met Pro Pro Asp Ser Thr Thr Ile Glu Lys
 1045 1050 1055
 Leu Arg Ala Ile Cys Leu Asp His Ala Lys Leu Gly Glu Ser Ser Leu
 1060 1065 1070
 Ser Pro Ser Leu Asp Ser Leu Phe Phe Gly Pro Ser Ala Ser Gln Val
 1075 1080 1085
 Leu Tyr Leu Thr Glu Val Val Tyr Ala Leu Leu Met Pro Ala Gly Ala
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 Pro Leu Thr Asp Asp Ser Ser Asp Phe Gln Phe His Phe Leu Lys Ser
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 Gly Gly Leu Pro Leu Val Leu Ser Met Leu Thr Arg Asn Asn Phe Leu
 1125 1130 1135
 Pro Asn Ala Asp Met Glu Thr Arg Arg Gly Ala Tyr Leu Asn Ala Leu
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 Lys Ile Ala Lys Leu Leu Leu Thr Ala Ile Gly Tyr Gly His Val Arg
 1155 1160 1165
 Ala Val Ala Glu Ala Cys Gln Pro Gly Val Glu Gly Val Asn Pro Met
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 Ala Leu Gln Ser Ile Pro Asn Pro Ser Ser Glu Cys Met Leu Arg Asn
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 Val Ser Val Arg Leu Ala Gln Gln Ile Ser Asp Glu Ala Ser Arg Tyr
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 Met Pro Asp Ile Cys Val Ile Arg Ala Ile His Gln Ile Ile Trp Thr

1235	1240	1245
Ser Gly Cys Gly Gly Leu Gln Leu Val Phe Ser Pro Asn Glu Glu Val		
1250	1255	1260
Thr Lys Ile Tyr Glu Lys Thr Asn Ala Gly Asn Glu Pro Asp Leu Glu		
265	1270	1275
Asp Glu Gln Val Cys Cys Glu Ala Leu Glu Val Met Thr Leu Cys Phe		1280
1285	1290	1295
Ala Leu Ile Pro Thr Ala Leu Asp Ala Leu Ser Lys Glu Lys Ala Trp		
1300	1305	1310
Gln Thr Phe Ile Ile Asp Leu Leu Leu His Cys His Ser Lys Thr Val		
1315	1320	1325
Arg Gln Val Ala Gln Glu Gln Phe Phe Leu Met Cys Thr Arg Cys Cys		
1330	1335	1340
Met Gly His Arg Pro Leu Leu Phe Phe Ile Thr Leu Leu Phe Thr Val		
345	1350	1355
Leu Gly Ser Thr Ala Arg Glu Arg Ala Lys His Ser Gly Asp Tyr Phe		1360
1365	1370	1375
Thr Leu Leu Arg His Leu Leu Asn Tyr Ala Tyr Asn Ser Asn Ile Asn		
1380	1385	1390
Val Pro Asn Ala Glu Val Leu Leu Asn Asn Glu Ile Asp Trp Leu Lys		
1395	1400	1405
Arg Ile Arg Asp Asp Val Lys Arg Thr Gly Glu Thr Gly Val Glu Glu		
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Thr Ile Leu Glu Gly His Leu Gly Val Thr Lys Glu Leu Leu Ala Phe		
425	1430	1435
Gln Thr Pro Glu Lys Lys Phe His Ile Gly Cys Glu Lys Gly Gly Ala		1440
1445	1450	1455
Asn Leu Ile Lys Glu Leu Ile Asp Asp Phe Ile Phe Pro Ala Ser Asn		
1460	1465	1470

Val Tyr Leu Gln Tyr Met Arg Asn Gly Glu Leu Pro Ala Glu Gln Ala
 1475 1480 1485
 Ile Pro Val Cys Gly Ser Pro Ala Thr Ile Asn Ala Gly Phe Glu Leu
 1490 1495 1500
 Leu Val Ala Leu Ala Val Gly Cys Val Arg Asn Leu Lys Gln Ile Val
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 Glu Ala Leu Thr Glu Trp Glu Tyr Leu Pro Pro Val Gly Pro Arg Pro
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 Pro Lys Gly Phe Val Gly Leu Lys Asn Ala Gly Ala Thr Cys Tyr Met
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 Asn Ser Val Ile Gln Gln Leu Tyr Met Ile Pro Ser Ile Arg Asn Gly
 1570 1575 1580
 Ile Leu Ala Ile Glu Gly Thr Gly Ser Asp Val Asp Asp Asp Met Ser
 585 1590 1595 1600
 Gly Asp Glu Lys Gln Asp Asn Glu Ser Asn Val Asp Pro Arg Asp Asp
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 Val Phe Gly Tyr Pro Gln Gln Phe Glu Asn Lys Pro Pro Leu Ile Lys
 1620 1625 1630
 Thr Glu Asn Arg Lys Lys Tyr Asn Ile Gly Val Leu Lys His Leu Gln
 1635 1640 1645
 Val Ile Phe Gly His Leu Ala Ala Ser Arg Leu Gln Tyr Tyr Val Pro
 1650 1655 1660
 Lys Gly Phe Trp Lys Gln Ser Arg Leu Trp Gly Glu Pro Val Asn Leu
 665 1670 1675 1680
 Arg Glu Gln His Asp Ala Leu Lys Ser Phe Asn Ser Leu Val Asp Ser
 1685 1690 1695
 Leu Asp Glu Ala Leu Lys Ala Leu Gly His Pro Ala Met Leu Ser Lys

1700	1705	1710
Val Leu Gly Gly Ser Phe Ala Asp Gln Lys Ile Cys Gln Gly Cys Pro		
1715	1720	1725
His Arg Tyr Glu Cys Glu Glu Ser Phe Thr Thr Leu Asn Val Asp Ile		
1730	1735	1740
Arg Asn His Gln Asn Leu Leu Asp Ser Leu Glu Gln Tyr Val Lys Gly		
745	1750	1755
Asp Leu Leu Glu Gly Ala Asn Ala Tyr His Cys Glu Lys Cys Asn Lys		1760
1765	1770	1775
Lys Val Asp Thr Val Lys Arg Leu Leu Ile Lys Lys Leu Pro Pro Val		
1780	1785	1790
Leu Ala Ile Gln Leu Lys Arg Phe Asp Tyr Asp Trp Glu Arg Glu Cys		
1795	1800	1805
Ala Ile Lys Phe Asn Asp Tyr Phe Glu Phe Pro Arg Glu Leu Asp Met		
1810	1815	1820
Glu Pro Tyr Thr Val Ala Gly Val Ala Lys Leu Glu Gly Asp Asn Val		
825	1830	1835
Asn Pro Glu Ser Gln Leu Ile Gln Gln Asn Glu Gln Ser Glu Ser Glu		1840
1845	1850	1855
Lys Ala Gly Ser Thr Lys Tyr Arg Leu Val Gly Val Leu Val His Ser		
1860	1865	1870
Gly Gln Ala Ser Gly Gly His Tyr Tyr Ser Tyr Ile Ile Gln Arg Asn		
1875	1880	1885
Gly Gly Asp Gly Glu Lys Asn Arg Trp Tyr Lys Phe Asp Asp Gly Asp		
1890	1895	1900
Val Thr Glu Cys Lys Met Asp Asp Asp Glu Glu Met Lys Thr Gln Cys		
905	1910	1915
Phe Gly Gly Glu Tyr Met Gly Glu Val Leu Asp His Met Met Lys Arg		1920
1925	1930	1935

Met Ser Tyr Arg Arg Gln Lys Arg Trp Trp Asn Ala Tyr Ile Leu Phe
 1940 1945 1950
 Tyr Glu Arg Met Asp Thr Ile Gly His Asp Asp Glu Val Ile Arg Tyr
 1955 1960 1965
 Ile Ser Glu Ile Ala Ile Thr Thr Arg Pro His Gln Ile Val Met Pro
 1970 1975 1980
 Ser Ala Ile Glu Arg Ser Val Arg Lys Gln Asn Val Gln Phe Met His
 985 1990 1995 2000
 Asn Arg Met Gln Tyr Ser Leu Glu Tyr Phe Gln Phe Met Lys Lys Leu
 2005 2010 2015
 Leu Thr Cys Asn Gly Val Tyr Leu Asn Pro Pro Pro Gly Gln Asp His
 2020 2025 2030
 Leu Ser Pro Glu Ala Glu Glu Ile Thr Met Ile Ser Ile Gln Leu Ala
 2035 2040 2045
 Ala Arg Phe Leu Phe Thr Thr Gly Phe His Thr Lys Lys Ile Val Arg
 2050 2055 2060
 Gly Ser Ala Ser Asp Trp Tyr Asp Ala Leu Cys Ile Leu Leu Arg His
 065 2070 2075 2080
 Ser Lys Asn Val Arg Phe Trp Phe Ala His Asn Val Leu Phe Asn Val
 2085 2090 2095
 Ser Asn Arg Phe Ser Glu Tyr Leu Leu Glu Cys Pro Ser Ala Glu Val
 2100 2105 2110
 Arg Gly Ala Phe Ala Lys Leu Ile Val Phe Ile Ala His Phe Ser Leu
 2115 2120 2125
 Gln Asp Gly Pro Cys Pro Ser Pro Phe Ala Ser Pro Gly Pro Ser Ser
 2130 2135 2140
 Gln Ala Tyr Asp Asn Leu Ser Leu Ser Asp His Leu Leu Arg Ala Val
 145 2150 2155 2160
 Leu Asn Leu Leu Arg Arg Glu Val Ser Glu His Gly Arg His Leu Gln

2165	2170	2175
Gln Tyr Phe Asn Leu Phe Val Met Tyr Ala Asn Leu Gly Val Ala Glu		
2180	2185	2190
Lys Thr Gln Leu Leu Lys Leu Ser Val Pro Ala Thr Phe Met Leu Val		
2195	2200	2205
Ser Leu Asp Glu Gly Pro Gly Pro Pro Ile Lys Tyr Gln Tyr Ala Glu		
2210	2215	2220
Leu Gly Lys Leu Tyr Ser Val Val Ser Gln Leu Ile Arg Cys Cys Asn		
225	2230	2235
Val Ser Ser Arg Met Gln Ser Ser Ile Asn Gly Asn Pro Ser Leu Pro		2240
2245	2250	2255
Asn Pro Phe Gly Asp Pro Asn Leu Ser Gln Pro Ile Met Pro Ile Gln		
2260	2265	2270
Gln Asn Val Val Asp Ile Leu Phe Val Arg Thr Ser Tyr Val Lys Lys		
2275	2280	2285
Ile Ile Glu Asp Cys Ser Asn Ser Asp Glu Thr Val Lys Leu Leu Arg		
2290	2295	2300
Phe Cys Cys Trp Glu Asn Pro Gln Phe Ser Ser Thr Val Leu Ser Glu		
305	2310	2315
Leu Leu Trp Gln Val Ala Tyr Ser Tyr Thr Tyr Glu Leu Arg Pro Tyr		2320
2325	2330	2335
Leu Asp Leu Leu Leu Gln Ile Leu Leu Ile Glu Asp Ser Trp Gln Thr		
2340	2345	2350
His Arg Ile His Asn Ala Leu Lys Gly Ile Pro Asp Asp Arg Asp Gly		
2355	2360	2365
Leu Phe Asp Thr Ile Gln Arg Ser Lys Asn His Tyr Gln Lys Arg Ala		
2370	2375	2380
Tyr Gln Cys Ile Lys Cys Met Val Ala Leu Phe Ser Ser Cys Pro Val		
385	2390	2395
		2400

Ala Tyr Gln Ile Leu Gln Gly Asn Gly Asp Leu Lys Arg Lys Trp Thr
 2405 2410 2415
 Trp Ala Val Glu Trp Leu Gly Asp Glu Leu Glu Arg Arg Pro Tyr Thr
 2420 2425 2430
 Gly Asn Pro Gln Tyr Thr Tyr Asn Asn Trp Ser Pro Pro Val Gln Ser
 2435 2440 2445
 Asn Glu Thr Ser Asn Gly Tyr Phe Leu Glu Arg Ser His Ser Ala Arg
 2450 2455 2460
 Met Thr Leu Ala Lys Ala Cys Glu Leu Cys Pro Glu Glu Glu Pro Asp
 465 2470 2475 2480
 Asp Gln Asp Ala Pro Asp Glu His Glu Ser Pro Pro Pro Glu Asp Ala
 2485 2490 2495
 Pro Leu Tyr Pro His Ser Pro Gly Ser Gln Tyr Gln Gln Asn Asn His
 2500 2505 2510
 Val His Gly Gln Pro Tyr Thr Gly Pro Ala Ala His His Met Asn Asn
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<211> 2196

<212> DNA

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<220>

<221> CDS

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<400> 441

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Met Asp Ile Glu Asn Glu Gln Thr Leu

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5

aat gtg aac ccc act gac cct gac aat tta agc gac tct ctc ttt tct 161

Asn Val Asn Pro Thr Asp Pro Asp Asn Leu Ser Asp Ser Leu Phe Ser

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15

20

25

gga gat gaa gaa aat gct ggc act gaa gaa ata aag aat gaa ata aat 209

Gly Asp Glu Glu Asn Ala Gly Thr Glu Glu Ile Lys Asn Glu Ile Asn

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35

40

gga aat tgg att tcc gca tct act att aat gaa gct aga atc aat gca 257

Gly Asn Trp Ile Ser Ala Ser Thr Ile Asn Glu Ala Arg Ile Asn Ala

45

50

55

aaa gcc aaa aga cga ctg cgg aaa aat tca tcc cgg gac tct ggc cga 305

Lys Ala Lys Arg Arg Leu Arg Lys Asn Ser Ser Arg Asp Ser Gly Arg

60

65

70

gga gac tca gtc agt gac aat gga agt gaa gcg gtt aga agt gga gtt 353

Gly Asp Ser Val Ser Asp Asn Gly Ser Glu Ala Val Arg Ser Gly Val

75

80

85

gct gtg ccc acc agt cca aaa gga agg ttg cta gat agg cgg tcc aga 401

Ala Val Pro Thr Ser Pro Lys Gly Arg Leu Leu Asp Arg Arg Ser Arg

90

95

100

105

tct ggg aaa gga agg ggg ctg cca aag aaa ggt ggt gca ggc ggc aag 449

Ser Gly Lys Gly Arg Gly Leu Pro Lys Lys Gly Gly Ala Gly Gly Lys

110

115

120

ggt gtc tgg ggc aca cct gga cag gtg tat gat gtg gaa gag gtg gat 497

Gly Val Trp Gly Thr Pro Gly Gln Val Tyr Asp Val Glu Glu Val Asp

125	130	135	
gtg aaa gat cca aac tat gat gac gac cag gag aac tgt gtt tat gaa			545
Val Lys Asp Pro Asn Tyr Asp Asp Asp Gln Glu Asn Cys Val Tyr Glu			
140	145	150	
act gta gtt ttg ccc ctg gat gag acc gca ttt gag aag act cta aca			593
Thr Val Val Leu Pro Leu Asp Glu Thr Ala Phe Glu Lys Thr Leu Thr			
155	160	165	
cca att ata cag gaa tac ttt gag cat gga gat aca aat gaa gtt gcg			641
Pro Ile Ile Gln Glu Tyr Phe Glu His Gly Asp Thr Asn Glu Val Ala			
170	175	180	185
gag atg tta aga gac tta aac ctt ggg gag atg aag agt ggc gtg ccg			689
Glu Met Leu Arg Asp Leu Asn Leu Gly Glu Met Lys Ser Gly Val Pro			
190	195	200	
gtg ttg gca gtg tcc tta gcc ttg gag ggg aag gcc agc cac cgg gag			737
Val Leu Ala Val Ser Leu Ala Leu Glu Gly Lys Ala Ser His Arg Glu			
205	210	215	
atg aca tcc aag ctg ctt tct gac ctt tgc ggg acg gtg atg atc aca			785
Met Thr Ser Lys Leu Leu Ser Asp Leu Cys Gly Thr Val Met Ile Thr			
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aat gac gtg gaa aag tca ttt gac aag ttg ctg aag gat ctc cct gag			833
Asn Asp Val Glu Lys Ser Phe Asp Lys Leu Leu Lys Asp Leu Pro Glu			
235	240	245	
cta gcc ttg gac act cct agg gca ccg cag ttg gtg ggc cag ttt att			881
Leu Ala Leu Asp Thr Pro Arg Ala Pro Gln Leu Val Gly Gln Phe Ile			
250	255	260	265
gct aga gct gtt gga gat gga atc tta tgt aat acc tat atc gat agt			929
Ala Arg Ala Val Gly Asp Gly Ile Leu Cys Asn Thr Tyr Ile Asp Ser			
270	275	280	
tac aaa gga act gta gat tgt gta cag gct cga gct gct ctg gat aag			977

Tyr Lys Gly Thr Val Asp Cys Val Gln Ala Arg Ala Ala Leu Asp Lys
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 gct act gtg ctc ctg agt atg tcc aaa ggc ggg aag cgg aaa gac agt 1025
 Ala Thr Val Leu Leu Ser Met Ser Lys Gly Gly Lys Arg Lys Asp Ser
 300 305 310
 gtg tgg gga tct gga ggc ggg caa cag cct gtc aat cac ctt gtt aaa 1073
 Val Trp Gly Ser Gly Gly Gly Gln Gln Pro Val Asn His Leu Val Lys
 315 320 325
 gag att gat atg ctg ctt aaa gag tat tta ctc tct gga gat ata tct 1121
 Glu Ile Asp Met Leu Leu Lys Glu Tyr Leu Leu Ser Gly Asp Ile Ser
 330 335 340 345
 gaa gct gaa cac tgc ctt aag gaa ctg gaa gta cct cat ttt cac cac 1169
 Glu Ala Glu His Cys Leu Lys Glu Leu Glu Val Pro His Phe His His
 350 355 360
 gag ctt gta tat gaa gcc att ata atg gtt tta gag tca act gga gaa 1217
 Glu Leu Val Tyr Glu Ala Ile Ile Met Val Leu Glu Ser Thr Gly Glu
 365 370 375
 agt gca ttc aag atg atc tta gat tta tta aaa tcc ttg tgg aag tct 1265
 Ser Ala Phe Lys Met Ile Leu Asp Leu Leu Lys Ser Leu Trp Lys Ser
 380 385 390
 tct act att acc ata gac caa atg aaa agg ggc tat gag aga att tac 1313
 Ser Thr Ile Thr Ile Asp Gln Met Lys Arg Gly Tyr Glu Arg Ile Tyr
 395 400 405
 aat gaa atc cca gac att aat ctg gat gtc ccg cac tca tac tct gtt 1361
 Asn Glu Ile Pro Asp Ile Asn Leu Asp Val Pro His Ser Tyr Ser Val
 410 415 420 425
 ctt gag aga ttt gtg gag gaa tgt ttt cag gct gga ata att tcc aaa 1409
 Leu Glu Arg Phe Val Glu Glu Cys Phe Gln Ala Gly Ile Ile Ser Lys
 430 435 440

caa ctc cgt gat ctt tgt cca tca agg gga aga aag cgt ttt gta agt 1457
 Gln Leu Arg Asp Leu Cys Pro Ser Arg Gly Arg Lys Arg Phe Val Ser
 445 450 455
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 Glu Gly Asp Gly Gly Arg Leu Lys Pro Glu Ser Tyr
 460 465 470
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<211> 469

<212> PRT

<213> Mus musculus

<400> 442

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20

25

30

Thr Glu Glu Ile Lys Asn Glu Ile Asn Gly Asn Trp Ile Ser Ala Ser
 35 40 45
 Thr Ile Asn Glu Ala Arg Ile Asn Ala Lys Ala Lys Arg Arg Leu Arg
 50 55 60
 Lys Asn Ser Ser Arg Asp Ser Gly Arg Gly Asp Ser Val Ser Asp Asn
 65 70 75 80
 Gly Ser Glu Ala Val Arg Ser Gly Val Ala Val Pro Thr Ser Pro Lys
 85 90 95
 Gly Arg Leu Leu Asp Arg Arg Ser Arg Ser Gly Lys Gly Arg Gly Leu
 100 105 110
 Pro Lys Lys Gly Gly Ala Gly Gly Lys Gly Val Trp Gly Thr Pro Gly
 115 120 125
 Gln Val Tyr Asp Val Glu Glu Val Asp Val Lys Asp Pro Asn Tyr Asp
 130 135 140
 Asp Asp Gln Glu Asn Cys Val Tyr Glu Thr Val Val Leu Pro Leu Asp
 145 150 155 160
 Glu Thr Ala Phe Glu Lys Thr Leu Thr Pro Ile Ile Gln Glu Tyr Phe
 165 170 175
 Glu His Gly Asp Thr Asn Glu Val Ala Glu Met Leu Arg Asp Leu Asn
 180 185 190
 Leu Gly Glu Met Lys Ser Gly Val Pro Val Leu Ala Val Ser Leu Ala
 195 200 205
 Leu Glu Gly Lys Ala Ser His Arg Glu Met Thr Ser Lys Leu Leu Ser
 210 215 220
 Asp Leu Cys Gly Thr Val Met Ile Thr Asn Asp Val Glu Lys Ser Phe
 225 230 235 240
 Asp Lys Leu Leu Lys Asp Leu Pro Glu Leu Ala Leu Asp Thr Pro Arg
 245 250 255
 Ala Pro Gln Leu Val Gly Gln Phe Ile Ala Arg Ala Val Gly Asp Gly

260 265 270
 Ile Leu Cys Asn Thr Tyr Ile Asp Ser Tyr Lys Gly Thr Val Asp Cys
 275 280 285
 Val Gln Ala Arg Ala Ala Leu Asp Lys Ala Thr Val Leu Leu Ser Met
 290 295 300
 Ser Lys Gly Gly Lys Arg Lys Asp Ser Val Trp Gly Ser Gly Gly Gly
 305 310 315 320
 Gln Gln Pro Val Asn His Leu Val Lys Glu Ile Asp Met Leu Leu Lys
 325 330 335
 Glu Tyr Leu Leu Ser Gly Asp Ile Ser Glu Ala Glu His Cys Leu Lys
 340 345 350
 Glu Leu Glu Val Pro His Phe His His Glu Leu Val Tyr Glu Ala Ile
 355 360 365
 Ile Met Val Leu Glu Ser Thr Gly Glu Ser Ala Phe Lys Met Ile Leu
 370 375 380
 Asp Leu Leu Lys Ser Leu Trp Lys Ser Ser Thr Ile Thr Ile Asp Gln
 385 390 395 400
 Met Lys Arg Gly Tyr Glu Arg Ile Tyr Asn Glu Ile Pro Asp Ile Asn
 405 410 415
 Leu Asp Val Pro His Ser Tyr Ser Val Leu Glu Arg Phe Val Glu Glu
 420 425 430
 Cys Phe Gln Ala Gly Ile Ile Ser Lys Gln Leu Arg Asp Leu Cys Pro
 435 440 445
 Ser Arg Gly Arg Lys Arg Phe Val Ser Glu Gly Asp Gly Gly Arg Leu
 450 455 460
 Lys Pro Glu Ser Tyr
 465

<210> 443

<211> 131

<212> DNA

<213> Mus musculus

<400> 443

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 aggaggtggt ggtgtgcatg cgaagagaca cagccctigga gacagccctc aatgccaagg 120
 cctacaagcg c 131

<210> 444

<211> 1758

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (93).. (1430)

<400> 444

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Met Ala Leu Leu Gly Asn Phe

1

5

ctt tgc tgc cta ctg gtt gcc tgg ctc tgc ggc ccg ggg ctc ggg gtg 161
 Leu Cys Cys Leu Leu Val Ala Trp Leu Cys Gly Pro Gly Leu Gly Val

10

15

20

ccc ctg gcg ccg gcg gat cgc gcc cca gct gtg ggg cag ttt tgg cac 209
 Pro Leu Ala Pro Ala Asp Arg Ala Pro Ala Val Gly Gln Phe Trp His

25

30

35

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gtg act gac tta cat cta gac cct act tac cac att aca gat gac cgt 257
Val Thr Asp Leu His Leu Asp Pro Thr Tyr His Ile Thr Asp Asp Arg
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acc aag gtg tgt gct tca tct aaa ggc gca aat gcc tcc aac cct ggg 305
Thr Lys Val Cys Ala Ser Ser Lys Gly Ala Asn Ala Ser Asn Pro Gly
      60              65              70
cct ttc gga gat gtc ctg tgt gac tct cca tat caa ctt att ttg tca 353
Pro Phe Gly Asp Val Leu Cys Asp Ser Pro Tyr Gln Leu Ile Leu Ser
      75              80              85
gcc ttt gat ttt att aag aat tca gga caa gaa gca tct ttc atg ata 401
Ala Phe Asp Phe Ile Lys Asn Ser Gly Gln Glu Ala Ser Phe Met Ile
      90              95              100
tgg aca ggg gat agc cca cct cat gtg cca gta cct gaa ctc tcc aca 449
Trp Thr Gly Asp Ser Pro Pro His Val Pro Val Pro Glu Leu Ser Thr
     105              110              115
ggc acc gtg ata aag gtg atc act aac atg aca atg act gtc cag aac 497
Gly Thr Val Ile Lys Val Ile Thr Asn Met Thr Met Thr Val Gln Asn
    120              125              130              135
ctg ttt cca aac ctc cag gtt ttc cct gca ctg ggc aat cat gac tac 545
Leu Phe Pro Asn Leu Gln Val Phe Pro Ala Leu Gly Asn His Asp Tyr
      140              145              150
tgg cca cag gac cag ctg cca ata gtc acc agt aag gtc tac agt gct 593
Trp Pro Gln Asp Gln Leu Pro Ile Val Thr Ser Lys Val Tyr Ser Ala
      155              160              165
gtg gct gac ctc tgg aaa ccc tgg ctg ggt gaa gaa gct att agc act 641
Val Ala Asp Leu Trp Lys Pro Trp Leu Gly Glu Glu Ala Ile Ser Thr
      170              175              180
tta aag aaa ggt ggt ttt tac tca cag aaa gtt gca agt aat cca ggc 689
Leu Lys Lys Gly Gly Phe Tyr Ser Gln Lys Val Ala Ser Asn Pro Gly

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185	190	195	
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Leu Arg Ile Ile Ser Leu Asn Thr Asn Leu Tyr Tyr Gly Pro Asn Ile			
200	205	210	215
atg acc ctg aac aag aca gac cca gca aat cag ttt gaa tgg ctg gaa			785
Met Thr Leu Asn Lys Thr Asp Pro Ala Asn Gln Phe Glu Trp Leu Glu			
220	225	230	
aat aca ctc aac agc tct cta tgg aat aag gag aag gta tac mtc ata			833
Asn Thr Leu Asn Ser Ser Leu Trp Asn Lys Glu Lys Val Tyr Xaa Ile			
235	240	245	
gcg cat gtt cca gtg ggc tat ctc cct tat gca act gac acc ccg gcg			881
Ala His Val Pro Val Gly Tyr Leu Pro Tyr Ala Thr Asp Thr Pro Ala			
250	255	260	
ata agg cag tac tat aat gag aaa ctg ctt gat att ttc aga aga tac			929
Ile Arg Gln Tyr Tyr Asn Glu Lys Leu Leu Asp Ile Phe Arg Arg Tyr			
265	270	275	
agc tcc gtc att gcg gga cag ttc tat ggc cac acc cat aga gac agc			977
Ser Ser Val Ile Ala Gly Gln Phe Tyr Gly His Thr His Arg Asp Ser			
280	285	290	295
ctt atg gtc ctt tca gat aan aac ggg aat cca ctc aat tct gtg ttt			1025
Leu Met Val Leu Ser Asp Xaa Asn Gly Asn Pro Leu Asn Ser Val Phe			
300	305	310	
gtg gca cct gct gtt aca cca gtg aaa gga gtt tta caa aag gag acc			1073
Val Ala Pro Ala Val Thr Pro Val Lys Gly Val Leu Gln Lys Glu Thr			
315	320	325	
aac aat ccc ggt gtc cgc cta ttt cag tac aag cct ggt gat tac aca			1121
Asn Asn Pro Gly Val Arg Leu Phe Gln Tyr Lys Pro Gly Asp Tyr Thr			
330	335	340	
ttg ctg gac atg gtg cag tat tac ttg aac ttg aca gaa gcc aat cta			1169

Leu Leu Asp Met Val Gln Tyr Tyr Leu Asn Leu Thr Gln Ala Asn Leu
 345 350 355
 aaa gga gaa tcc aac tgg aca ttg gag tat gtc ttg act cag gcc tac 1217
 Lys Gly Glu Ser Asn Trp Thr Leu Glu Tyr Val Leu Thr Gln Ala Tyr
 360 365 370 375
 agt gtt gca gat ctg cag cca aag agt tta tat gcc tta gtt cag caa 1265
 Ser Val Ala Asp Leu Gln Pro Lys Ser Leu Tyr Ala Leu Val Gln Gln
 380 385 390
 ttt gcc acc aaa gac agc aag cag ttc ctg aaa tac tac cat tat tat 1313
 Phe Ala Thr Lys Asp Ser Lys Gln Phe Leu Lys Tyr Tyr His Tyr Tyr
 395 400 405
 ttt gtg agt tat gac agc agt gca act tgt gac cag cat tgt aag acc 1361
 Phe Val Ser Tyr Asp Ser Ser Ala Thr Cys Asp Gln His Cys Lys Thr
 410 415 420
 tta cag gtc tgt gca att atg aat ctt gat agc atg tcc tat gat gat 1409
 Leu Gln Val Cys Ala Ile Met Asn Leu Asp Ser Met Ser Tyr Asp Asp
 425 430 435
 tgc ctt aaa cag cat tta taa agcacagtca ctagtattcc agtttgtttt 1460
 Cys Leu Lys Gln His Leu
 440 445
 gtagaaaaaa aaaatcacat catggtgctc ctgcgatcag cttctgaagt gctgggagca 1520
 taggaagatt gacattctgt gtgacttggtg aggctcagat gctgatacca gtaacattca 1580
 aaattaactt cagcattga atacatttaa actgttcatt agcggagtga tatttgga 1640
 taaatatctc gtcttccaat tttatgtaat tataacctaac ttataccctt gtaaaacttg 1700
 tcatctatgc aataaagcag ttgatttttc tgtggaaaaa aaaaaaaaaa aaaaaaaaaa 1758

<210> 445

<211> 445

<212> PRT

<213> Mus musculus

<400> 445

Met Ala Leu Leu Gly Asn Phe Leu Cys Cys Leu Leu Val Ala Trp Leu
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 20 25 30
 Ala Val Gly Gln Phe Trp His Val Thr Asp Leu His Leu Asp Pro Thr
 35 40 45
 Tyr His Ile Thr Asp Asp Arg Thr Lys Val Cys Ala Ser Ser Lys Gly
 50 55 60
 Ala Asn Ala Ser Asn Pro Gly Pro Phe Gly Asp Val Leu Cys Asp Ser
 65 70 75 80
 Pro Tyr Gln Leu Ile Leu Ser Ala Phe Asp Phe Ile Lys Asn Ser Gly
 85 90 95
 Gln Glu Ala Ser Phe Met Ile Trp Thr Gly Asp Ser Pro Pro His Val
 100 105 110
 Pro Val Pro Glu Leu Ser Thr Gly Thr Val Ile Lys Val Ile Thr Asn
 115 120 125
 Met Thr Met Thr Val Gln Asn Leu Phe Pro Asn Leu Gln Val Phe Pro
 130 135 140
 Ala Leu Gly Asn His Asp Tyr Trp Pro Gln Asp Gln Leu Pro Ile Val
 145 150 155 160
 Thr Ser Lys Val Tyr Ser Ala Val Ala Asp Leu Trp Lys Pro Trp Leu
 165 170 175
 Gly Glu Glu Ala Ile Ser Thr Leu Lys Lys Gly Gly Phe Tyr Ser Gln
 180 185 190
 Lys Val Ala Ser Asn Pro Gly Leu Arg Ile Ile Ser Leu Asn Thr Asn
 195 200 205

Leu Tyr Tyr Gly Pro Asn Ile Met Thr Leu Asn Lys Thr Asp Pro Ala
 210 215 220
 Asn Gln Phe Glu Trp Leu Glu Asn Thr Leu Asn Ser Ser Leu Trp Asn
 225 230 235 240
 Lys Glu Lys Val Tyr Xaa Ile Ala His Val Pro Val Gly Tyr Leu Pro
 245 250 255
 Tyr Ala Thr Asp Thr Pro Ala Ile Arg Gln Tyr Tyr Asn Glu Lys Leu
 260 265 270
 Leu Asp Ile Phe Arg Arg Tyr Ser Ser Val Ile Ala Gly Gln Phe Tyr
 275 280 285
 Gly His Thr His Arg Asp Ser Leu Met Val Leu Ser Asp Xaa Asn Gly
 290 295 300
 Asn Pro Leu Asn Ser Val Phe Val Ala Pro Ala Val Thr Pro Val Lys
 305 310 315 320
 Gly Val Leu Gln Lys Glu Thr Asn Asn Pro Gly Val Arg Leu Phe Gln
 325 330 335
 Tyr Lys Pro Gly Asp Tyr Thr Leu Leu Asp Met Val Gln Tyr Tyr Leu
 340 345 350
 Asn Leu Thr Glu Ala Asn Leu Lys Gly Glu Ser Asn Trp Thr Leu Glu
 355 360 365
 Tyr Val Leu Thr Gln Ala Tyr Ser Val Ala Asp Leu Gln Pro Lys Ser
 370 375 380
 Leu Tyr Ala Leu Val Gln Gln Phe Ala Thr Lys Asp Ser Lys Gln Phe
 385 390 395 400
 Leu Lys Tyr Tyr His Tyr Tyr Phe Val Ser Tyr Asp Ser Ser Ala Thr
 405 410 415
 Cys Asp Gln His Cys Lys Thr Leu Gln Val Cys Ala Ile Met Asn Leu
 420 425 430
 Asp Ser Met Ser Tyr Asp Asp Cys Leu Lys Gln His Leu

435

440

445

<210> 446

<211> 2394

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (570).. (833)

<400> 446

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 aattttccat caaatgtatt cttaaaaaat ctgtgtatat tcagttatat acaataatct 180
 cattatttaa aatactaaat ttctcccaag aactccaaat acattacaga tgttataaga 240
 attctcacag caaatccctt ggaacaagag gagggcaggc actgtaatct ttaagtctaa 300
 atcatatcaa aaatttttca ctggaaaatt taaggaaata ttcccaaga ggcctccatg 360
 caaaaatctg ttttttgta aaaagaaaat taaattctaa tagtaagtaa caattttctg 420
 aacttagttt ctctaataaa cagaatattc agaaaggga ttagtgtcag ctccaagggtg 480
 gagccaaagc ctcttaagag aacctatat agggccagaa tatctacaaa tctgaaagta 540
 atcaaagatc ttagaatact agctgtaac atg tgg gca aat ata tct agc ttt 593

Met Trp Ala Asn Ile Ser Ser Phe

1

5

att att cat aaa ttt tgg aag aat gct acg tat tat aca tgt agc ttt 641
 Ile Ile His Lys Phe Trp Lys Asn Ala Thr Tyr Tyr Thr Cys Ser Phe

10

15

20

gtg tgt gtg tgt atg gat atc cat aca cac aca gtt tta caa aat gaa 689
 Val Cys Val Cys Met Asp Ile His Thr His Thr Val Leu Gln Asn Glu

25	30	35	40	
cta ttt atg tac aca tac ttc aga act gcc ttt tcc tta ttt agt gta	737			
Leu Phe Met Tyr Thr Tyr Phe Arg Thr Ala Phe Ser Leu Phe Ser Val				
45	50	55		
aag att agt tgc tat gga ggt agg acc ctc aac tct gta att ctg tat	785			
Lys Ile Ser Cys Tyr Gly Gly Arg Thr Leu Asn Ser Val Ile Leu Tyr				
60	65	70		
aat gga gaa ctg ttt caa act ctc tac att ttc aat tta ctc att taa	833			
Asn Gly Glu Leu Phe Gln Thr Leu Tyr Ile Phe Asn Leu Leu Ile				
75	80	85		
aataattata actaattctg tggccttgac agctaagctc aatcactgaa tcatgatact	893			
tgatatatat aaaactaagt attgttttgg agttaggac atttcttgig ttgcccggat	953			
ctcataatgtg ctaggtacat actctgacaa caatagccct gggccctgitt ctgttttgitt	1013			
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ggcctcctag gtgcctgcac tactaggcct ggcatcatca gcattttggc caggttagta	1133			
cctggccata atcaacgtcc tactactgga ttttactgct atcttgagct attttctaaa	1193			
taagttttta taatcaattt gtcattttta aagaagtgtt ttaaacttat tataaattac	1253			
cagactctgg aatctagggc ttagtcctat ttggtttatg atgatatcta tttcagaaag	1313			
ctatggtcag caattatata aagtcagaca aaaacaaaca cttttgctgt atttgacatc	1373			
agatattaac taaaaaacag aaatggagac tgtacagtaa aagcactgta agactgaagg	1433			
tgaaaactct actgtagggc agtaaataata ctccattgcc taaggttaaa tgacttgttc	1493			
agagacatca tttctacagg catttgaca ttgaaaatg aaataatata tgtaaccatt	1553			
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gtctgttatg ttagactctc cccatgagag aagtataaat ttccttgatc atgttatcta	1793			
ggaagaatct tttgtcagg cctgatggtt tctatagact cagaigggaa cttgagtttc	1853			
aaatttggtg attttctact gagaaacagt tgtattttct taatattggc atttatatta	1913			
tagtgagcaa aactatcatt ccattaggag aaatctaata tagctatggt gatggctcat	1973			

gagtaccatt tataacagaa acaatgttaa atacagatga tactctagac attatgcatt 2033
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 atactgagig gatagactgc tcigcigata aaatttttcc aaagcagctg agaaaggctt 2153
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 aactttctct gcaagcttac attacagtgt gctgaaacac taagttataa ggtgtcatgc 2273
 aaatactgig ctctgactca tgttacaatg agaatccatg agtttttagca aatacatgta 2333
 gtttacaag ttattaagtg tatgggccac ttigttaaca ctttgctgct ccctccccac 2393
 c 2394

<210> 447

<211> 87

<212> PRT

<213> Mus musculus

<400> 447

Met	Trp	Ala	Asn	Ile	Ser	Ser	Phe	Ile	Ile	His	Lys	Phe	Trp	Lys	Asn
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Ala	Thr	Tyr	Tyr	Thr	Cys	Ser	Phe	Val	Cys	Val	Cys	Met	Asp	Ile	His
				20						25				30	
Thr	His	Thr	Val	Leu	Gln	Asn	Glu	Leu	Phe	Met	Tyr	Thr	Tyr	Phe	Arg
			35					40					45		
Thr	Ala	Phe	Ser	Leu	Phe	Ser	Val	Lys	Ile	Ser	Cys	Tyr	Gly	Gly	Arg
	50					55						60			
Thr	Leu	Asn	Ser	Val	Ile	Leu	Tyr	Asn	Gly	Glu	Leu	Phe	Gln	Thr	Leu
65					70					75				80	
Tyr	Ile	Phe	Asn	Leu	Leu	Ile									

<210> 448

<211> 1155

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (76).. (621)

<400> 448

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Met Gly Asn Val Phe Glu Lys Leu Phe Lys Ser Leu

1

5

10

ttt ggg aaa aag gaa atg cgg att ctc atg gtg ggc tta gat gca gct 159
 Phe Gly Lys Lys Glu Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala

15

20

25

ggc aaa acg acg atc ttg tac aaa ttg aag cta gga gag att gtg aca 207
 Gly Lys Thr Thr Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr

30

35

40

acc atc cct acc ata ggt ttc aat gtg gag aca gta gag tac aaa aac 255
 Thr Ile Pro Thr Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn

45

50

55

60

atc agc ttc aca gtc tgg gat gtt ggt ggc cag gac aaa att aga cct 303
 Ile Ser Phe Thr Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro

65

70

75

ttg tgg cga cat tac ttc cag aac act caa ggt ctg att ttc gtg gtt 351
 Leu Trp Arg His Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val

80

85

90

gac agt aat gac cga gag cgg gtc aat gag gcc cgg gaa gaa ttg acc 399
 Asp Ser Asn Asp Arg Glu Arg Val Asn Glu Ala Arg Glu Glu Leu Thr

95 100 105
 aga atg cta gca gaa gat gag ctc aga gat gca gtc ttg ttg gtg ttt 447
 Arg Met Leu Ala Glu Asp Glu Leu Arg Asp Ala Val Leu Leu Val Phe
 110 115 120
 gta aac aaa cag gat ctt cct aat gct atg aat gca gca gag atc aca 495
 Val Asn Lys Gln Asp Leu Pro Asn Ala Met Asn Ala Ala Glu Ile Thr
 125 130 135 140
 gac aag ctt ggc tta cac tcc ctt cgc cag aga aac tgg tac att cag 543
 Asp Lys Leu Gly Leu His Ser Leu Arg Gln Arg Asn Trp Tyr Ile Gln
 145 150 155
 gct acc tgt gcg acc agt gga gat ggg ctt tac gaa ggc ctg gac tgg 591
 Ala Thr Cys Ala Thr Ser Gly Asp Gly Leu Tyr Glu Gly Leu Asp Trp
 160 165 170
 ctc tcc aac cag ctc aaa aac cag aag tga tcagaagcaa cccattcccc 641
 Leu Ser Asn Gln Leu Lys Asn Gln Lys
 175 180
 atgcattgtg gcaaagccag ctggcctttc ccgtgtgcat gtgagcgtgt gaggagccca 701
 gggggctgtg tggctggagt gggggcagct ttctcacacc gtgccttata cacgctatac 761
 gaaaaccagt attccatttt aagaaaacca gtgttacatt ttgaatgcta ccttccattt 821
 cactagcttt gatggtcatt ttgtctgagg cctccctggg tgtgatagcc agagcatctc 881
 tagcctggaa aagaagaaag caggagccag acaggtcctg ttgttgccaa cctgggtctg 941
 gcctctccat acaccagaa ttctgttgga cgtcagtgtc cttttataaa aggaaaggaa 1001
 ggatctgtca ttctttccat tgtgccaaag ctagcagctc acttgtagt ctttaaagct 1061
 cccgagaaga aaagatgcat tattaccacg ggtttgagga gggtcagagg gggctactcc 1121
 cccaaagttc tgttagctca gactgactca tttta 1155

<210> 449

<211> 181

<212> PRT

<213> Mus musculus

<400> 449

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Met Gly Asn Val Phe Glu Lys Leu Phe Lys Ser Leu Phe Gly Lys Lys
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Glu Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr
      20             25             30
Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr
      35             40             45
Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Ser Phe Thr
      50             55             60
Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His
      65             70             75             80
Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp
      85             90             95
Arg Glu Arg Val Asn Glu Ala Arg Glu Glu Leu Thr Arg Met Leu Ala
      100            105            110
Glu Asp Glu Leu Arg Asp Ala Val Leu Leu Val Phe Val Asn Lys Gln
      115            120            125
Asp Leu Pro Asn Ala Met Asn Ala Ala Glu Ile Thr Asp Lys Leu Gly
      130            135            140
Leu His Ser Leu Arg Gln Arg Asn Trp Tyr Ile Gln Ala Thr Cys Ala
      145            150            155            160
Thr Ser Gly Asp Gly Leu Tyr Glu Gly Leu Asp Trp Leu Ser Asn Gln
      165            170            175
Leu Lys Asn Gln Lys
      180

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<210> 450

<211> 1107

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (41).. (583)

<400> 450

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                                         1           5
tcc tct ctc ttc tgc cgc ctg ttc ggc aag aag cag atg cgc att ttg      103
Ser Ser Leu Phe Ser Arg Leu Phe Gly Lys Lys Gln Met Arg Ile Leu
          10           15           20
atg gtt gga ttg gat gct gct ggc aag acg aca att ctg tat aaa ctg      151
Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu Tyr Lys Leu
          25           30           35
aaa tta ggg gaa ata gtc acc acc att cct acc att ggt ttt aat gtg      199
Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr Ile Gly Phe Asn Val
          40           45           50
gaa aca gta gaa tat aag aac att tgt ttc aca gta tgg gat gtt ggt      247
Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr Val Trp Asp Val Gly
          55           60           65
ggc caa gat aaa att agg cct ctc tgg agg cat tac ttc cag aat acc      295
Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Phe Gln Asn Thr
          70           75           80           85
cag ggt ctc att ttt gtg gta gat agc aat gat cgt gaa aga atc cag      343
Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp Arg Glu Arg Ile Gln

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90	95	100	
gaa gga gca gct gtg ctg cag aaa atg ctt ctg gaa gat gag ctg cag			391
Glu Gly Ala Ala Val Leu Gln Lys Met Leu Leu Glu Asp Glu Leu Gln			
105	110	115	
gat gca gtg ctg ctc ctt ttt gca aac aaa cag gat ctg cca aac gct			439
Asp Ala Val Leu Leu Leu Phe Ala Asn Lys Gln Asp Leu Pro Asn Ala			
120	125	130	
atg gcc atc agt gag atg aca gac aag cta ggt ctg cag tct ctc cga			487
Met Ala Ile Ser Glu Met Thr Asp Lys Leu Gly Leu Gln Ser Leu Arg			
135	140	145	
aac aga aca tgg tat gtc caa gcc act tgt gct aca caa gga act ggt			535
Asn Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala Thr Gln Gly Thr Gly			
150	155	160	165
ctg tat gag gga ctg gat tgg ctg tca aat gaa ctt tca aaa cgt taa			583
Leu Tyr Glu Gly Leu Asp Trp Leu Ser Asn Glu Leu Ser Lys Arg			
170	175	180	
atgaagctgg atatctaacc aaggacatgt ttgatagaat tggcttaggc ttgttacaac			643
aaaattagtt tgcattcttgg ttattaaagg atatctgaga caggtttggg cagaaattac			703
agcgittaaa acttgittttg ttgccaatta ttgtttacca agaacaatgt tgctatttag			763
caatatgctt gggtttaaga gaaattctcc ttgggaaaga aaagtatcca ttattatgct			823
tcccttgaac ctaaatgcct ggatacagag ctatcctgac accittagac agatctgagt			883
ggtttttgag cccaaaacaa taatgtttta aagttattcc ctigatactt tactgagacc			943
tttatcattc ctcagacagt ctgctgattt aaaaatgtag cattccattt gtatttat			1003
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<210> 451

<211> 180

<212> PRT

<213> Mus musculus

<400> 451

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 1 5 10 15
 Gln Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr
 20 25 30
 Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr
 35 40 45
 Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr
 50 55 60
 Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His
 65 70 75 80
 Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp
 85 90 95
 Arg Glu Arg Ile Gln Glu Gly Ala Ala Val Leu Gln Lys Met Leu Leu
 100 105 110
 Glu Asp Glu Leu Gln Asp Ala Val Leu Leu Leu Phe Ala Asn Lys Gln
 115 120 125
 Asp Leu Pro Asn Ala Met Ala Ile Ser Glu Met Thr Asp Lys Leu Gly
 130 135 140
 Leu Gln Ser Leu Arg Asn Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala
 145 150 155 160
 Thr Gln Gly Thr Gly Leu Tyr Glu Gly Leu Asp Trp Leu Ser Asn Glu
 165 170 175
 Leu Ser Lys Arg
 180

<210> 452

<211> 933

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (50).. (592)

<400> 452

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Met Gly Leu

1

acg gtg tcc gcg ctc ttt tcg cgg atc ttc ggg aag aag cag atg cgg 106

Thr Val Ser Ala Leu Phe Ser Arg Ile Phe Gly Lys Lys Gln Met Arg

5

10

15

atc ctt atg gtt ggc ttg gat gcg gct ggc aag act acc atc ctg tac 154

Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu Tyr

20

25

30

35

aaa ctg aag ttg ggg gag att gtc acc acc atc ccc act ata ggc ttc 202

Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr Ile Gly Phe

40

45

50

aat gtg gaa aca gtg gaa tat aag aac atc tgt ttc aca gtg tgg gat 250

Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr Val Trp Asp

55

60

65

gtt gga ggc cag gat aag att cgg cct ctg tgg cgg cac tac ttc cag 298

Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Phe Gln

70

75

80

aac act cag ggc ctc atc ttt gtg gta gac agc aac gac cgg gag cgg 346

Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp Arg Glu Arg

85 90 95
 gtc cag gag tct gct gat gaa ctc cag aag atg ctg cag gag gat gag 394
 Val Gln Glu Ser Ala Asp Glu Leu Gln Lys Met Leu Gln Glu Asp Glu
 100 105 110 115
 ctc cgg gat gcg gtg ctg ctg gtg ttt gcc aac aag cag gac atg ccc 442
 Leu Arg Asp Ala Val Leu Leu Val Phe Ala Asn Lys Gln Asp Met Pro
 120 125 130
 aat gcc atg ccc gtg agc gag ctg act gac aag ctg ggc ctt cag cac 490
 Asn Ala Met Pro Val Ser Glu Leu Thr Asp Lys Leu Gly Leu Gln His
 135 140 145
 ctg cgt agc cgc acg tgg tac gtc cag gcc acc tgt gcc acc caa ggc 538
 Leu Arg Ser Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala Thr Gln Gly
 150 155 160
 aca ggc ctg tat gat ggg ctg gac tgg ctg tcc cac gag ctg tca aag 586
 Thr Gly Leu Tyr Asp Gly Leu Asp Trp Leu Ser His Glu Leu Ser Lys
 165 170 175
 cgc tag ccagccaggg gcaggccct gctgcccgga agctcccgcg tgcattcccg 642
 Arg.
 180
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 gacaggcctc tgctcctgcg cctgcctgca tgctctctct tgctgttga gcttgagcc 762
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<210> 453

<211> 180

<212> PRT

<213> Mus musculus

<400> 453

Met Gly Leu Thr Val Ser Ala Leu Phe Ser Arg Ile Phe Gly Lys Lys

1

5

10

15

Gln Met Arg Ile Leu Met Val Gly Leu Asp Ala Ala Gly Lys Thr Thr

20

25

30

Ile Leu Tyr Lys Leu Lys Leu Gly Glu Ile Val Thr Thr Ile Pro Thr

35

40

45

Ile Gly Phe Asn Val Glu Thr Val Glu Tyr Lys Asn Ile Cys Phe Thr

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55

60

Val Trp Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His

65

70

75

80

Tyr Phe Gln Asn Thr Gln Gly Leu Ile Phe Val Val Asp Ser Asn Asp

85

90

95

Arg Glu Arg Val Gln Glu Ser Ala Asp Glu Leu Gln Lys Met Leu Gln

100

105

110

Glu Asp Glu Leu Arg Asp Ala Val Leu Leu Val Phe Ala Asn Lys Gln

115

120

125

Asp Met Pro Asn Ala Met Pro Val Ser Glu Leu Thr Asp Lys Leu Gly

130

135

140

Leu Gln His Leu Arg Ser Arg Thr Trp Tyr Val Gln Ala Thr Cys Ala

145

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Thr Gln Gly Thr Gly Leu Tyr Asp Gly Leu Asp Trp Leu Ser His Glu

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170

175

Leu Ser Lys Arg

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<210> 454

<211> 1511

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<213> Mus musculus

<220>

<221> CDS

<222> (487).. (1014)

<400> 454

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 gcagcttcgc gcaggccga gggcgctctc gcagcgcg gcgcacgttt cgggctcgcg 420
 gcggcgttgt aggcctgagg ggaccggga cacctgaatg ccccgggccc cggctcttcc 480
 gacgcg atg ggg aag gtg cta tcc aag atc ttc ggg aac aag gaa atg 528
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 1 5 10
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 Arg Ile Leu Met Leu Gly Leu Asp Ala Ala Gly Lys Thr Thr Ile Leu
 15 20 25 30
 tac aag ttg aag ctg ggc caa tcg gtg acc acc atc ccc acg gtg ggc 624
 Tyr Lys Leu Lys Leu Gly Gln Ser Val Thr Thr Ile Pro Thr Val Gly
 35 40 45
 ttc aac gtg gag acg gtg act tac aaa aac gtc aag ttc aac gtg tgg 672
 Phe Asn Val Glu Thr Val Thr Tyr Lys Asn Val Lys Phe Asn Val Trp
 50 55 60
 gat gtg ggc ggc cag gac aag atc cgg ccg ctc tgg cgg cat tac tac 720

Asp Val Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Tyr
 65 70 75
 acc ggg acc cag ggt ctg atc ttc gtg gta gac tgc gcc gac cgc gac 768
 Thr Gly Thr Gln Gly Leu Ile Phe Val Val Asp Cys Ala Asp Arg Asp
 80 85 90
 cgc atc gac gag gcc cgc cag gag ctg cac cgc att atc aat gac cgg 816
 Arg Ile Asp Glu Ala Arg Gln Glu Leu His Arg Ile Ile Asn Asp Arg
 95 100 105 110
 gag atg agg gac gcc atc atc ctc atc ttc gcc aac aag cag gac ctg 864
 Glu Met Arg Asp Ala Ile Ile Leu Ile Phe Ala Asn Lys Gln Asp Leu
 115 120 125
 ccc gat gcc atg aaa ccc cat gag atc cag gag aaa ctg ggc ctg acc 912
 Pro Asp Ala Met Lys Pro His Glu Ile Gln Glu Lys Leu Gly Leu Thr
 130 135 140
 cgg att cgg gac agg aac tgg tat gtg cag ccc tcc tgt gcc acc tcc 960
 Arg Ile Arg Asp Arg Asn Trp Tyr Val Gln Pro Ser Cys Ala Thr Ser
 145 150 155
 ggg gac gga ctc tat gag ggg ctc aca tgg tta acc tct aac tac aaa 1008
 Gly Asp Gly Leu Tyr Glu Gly Leu Thr Trp Leu Thr Ser Asn Tyr Lys
 160 165 170
 tcc taa tgagcgtcct ccaccagcc cccggaagga gagaaatcca aaacccattc 1064
 Ser
 175
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<210> 455

<211> 175

<212> PRT

<213> Mus musculus

<400> 455

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 35 40 45
 Val Glu Thr Val Thr Tyr Lys Asn Val Lys Phe Asn Val Trp Asp Val
 50 55 60
 Gly Gly Gln Asp Lys Ile Arg Pro Leu Trp Arg His Tyr Tyr Thr Gly
 65 70 75 80
 Thr Gln Gly Leu Ile Phe Val Val Asp Cys Ala Asp Arg Asp Arg Ile
 85 90 95
 Asp Glu Ala Arg Gln Glu Leu His Arg Ile Ile Asn Asp Arg Glu Met
 100 105 110
 Arg Asp Ala Ile Ile Leu Ile Phe Ala Asn Lys Gln Asp Leu Pro Asp
 115 120 125
 Ala Met Lys Pro His Glu Ile Gln Glu Lys Leu Gly Leu Thr Arg Ile
 130 135 140
 Arg Asp Arg Asn Trp Tyr Val Gln Pro Ser Cys Ala Thr Ser Gly Asp
 145 150 155 160

Gly Leu Tyr Glu Gly Leu Thr Trp Leu Thr Ser Asn Tyr Lys Ser

165

170

175

<210> 456

<211> 966

<212> DNA

<213> Mus musculus

<400> 456

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acttttaaac tagtaataga attttctgaa gaatatccaa ataaaccacc aaccgttagg 240
tttttatcca aaatgtttca tccaaatgtg tatgctgatg gtagcataatg tttagatata 300
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ctgctggatg aaccgaatcc aaacagtcca gccaacagcc aagcagcaca gctttatcag 420
gaaaacaaac gggagtatga gaagagagtt tgggccattg ttgagcaaag ctggaatgat 480
tcataataga cacttggtct gctcatcctt catcgttgtt gtgtataatt tacctcccag 540
tagaaaggct agcaagtttt aagtgccacg ggttttaagg attctgcaga gaaaaaaaga 600
aaaagtcctt cagtttagaa cctacaaaag cttgtgtatc ttgattaatg tactttttat 660
tgcatggigt gaactaagtt attgctgcat aaatttgtaa tatatccigt ttgtattttt 720
ttccaagtgt ataatgttgg tgtggagttt tcatgacaga atatacacat ttgttaaata 780
tgtacttttt tcaaataattg aatgccttat ttttgaattc tttagatttt taaattcgga 840
gaaaagcact taaagttttt tatatatgaa tattagatgt aaagctgita aaatacataa 900
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966

<210> 457

<211> 1976

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (30).. (1478)

<400> 457

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aag tca aaa caa gag aag atg gcg tgc aga gat aag agc atg cag gac   101
Lys Ser Lys Gln Glu Lys Met Ala Cys Arg Asp Lys Ser Met Gln Asp
    10             15             20

cga ttg cga tta ggc cac ttt act act gtc cgg cat gga gcc tcg ttt   149
Arg Leu Arg Leu Gly His Phe Thr Thr Val Arg His Gly Ala Ser Phe
    25             30             35             40

act gag cag tgg aca gat ggt tat gct ttc caa aac ctc atc aag caa   197
Thr Glu Gln Trp Thr Asp Gly Tyr Ala Phe Gln Asn Leu Ile Lys Gln
           45             50             55

cag gaa agg ata aat tca cag aga gaa gag ata gaa agg caa cgg aaa   245
Gln Glu Arg Ile Asn Ser Gln Arg Glu Glu Ile Glu Arg Gln Arg Lys
           60             65             70

atg tta gca aaa cgg aaa cct cct gcc atg ggt cag gcc cct cct gca   293
Met Leu Ala Lys Arg Lys Pro Pro Ala Met Gly Gln Ala Pro Pro Ala
           75             80             85

acc aat gag cag aaa caa cgg aaa agc aag act aat gga gct gaa aat   341
Thr Asn Glu Gln Lys Gln Arg Lys Ser Lys Thr Asn Gly Ala Glu Asn
    90             95             100

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gaa acg tta acg tta gcc gag tac cat gaa caa gag gaa atc ttc aaa 389
 Glu Thr Leu Thr Leu Ala Glu Tyr His Glu Gln Glu Glu Ile Phe Lys
 105 110 115 120
 ctt aga tta ggt cat ctt aag aaa gag gaa gca gaa atc cag gca gag 437
 Leu Arg Leu Gly His Leu Lys Lys Glu Glu Ala Glu Ile Gln Ala Glu
 125 130 135
 ctg gaa agg ctg gaa agg gtt agg aat cta cac atc agg gaa tta aaa 485
 Leu Glu Arg Leu Glu Arg Val Arg Asn Leu His Ile Arg Glu Leu Lys
 140 145 150
 agg ata cat aat gaa gac aat tcg cag ttt aaa gac cat cca aca cta 533
 Arg Ile His Asn Glu Asp Asn Ser Gln Phe Lys Asp His Pro Thr Leu
 155 160 165
 aat gac aga tat ttg ttg tta cat ctt ttg ggt aga gga ggt ttc agt 581
 Asn Asp Arg Tyr Leu Leu Leu His Leu Leu Gly Arg Gly Gly Phe Ser
 170 175 180
 gaa gtt tac aag gca ttt gat cta acg gag caa aga tat gta gct gtg 629
 Glu Val Tyr Lys Ala Phe Asp Leu Thr Glu Gln Arg Tyr Val Ala Val
 185 190 195 200
 aaa att cac cag tta aat aaa aac tgg aga gat gag aaa aag gag aat 677
 Lys Ile His Gln Leu Asn Lys Asn Trp Arg Asp Glu Lys Lys Glu Asn
 205 210 215
 tac cac aag cat gcg tgt agg gaa tac cgg att cac aag gag ctg gac 725
 Tyr His Lys His Ala Cys Arg Glu Tyr Arg Ile His Lys Glu Leu Asp
 220 225 230
 cac ccc agg ata gtg aag ctg tat gat tac ttt tca ctg gac act gac 773
 His Pro Arg Ile Val Lys Leu Tyr Asp Tyr Phe Ser Leu Asp Thr Asp
 235 240 245
 tcg ttt tgt aca gta tta gaa tac tgt gaa ggg aat gac ctg gac ttc 821
 Ser Phe Cys Thr Val Leu Glu Tyr Cys Glu Gly Asn Asp Leu Asp Phe

250	255	260	
tac cta aaa cag cac aaa tta atg tcg gag aaa gaa gcc cga tcc att			869
Tyr Leu Lys Gln His Lys Leu Met Ser Glu Lys Glu Ala Arg Ser Ile			
265	270	275	280
att atg cag att gtg aat gct tta aag tac tta aat gaa ata aaa cct			917
Ile Met Gln Ile Val Asn Ala Leu Lys Tyr Leu Asn Glu Ile Lys Pro			
285	290	295	
ccc atc ata cac tat gac ctc aaa cca ggt aat atc ctt tta gta aat			965
Pro Ile Ile His Tyr Asp Leu Lys Pro Gly Asn Ile Leu Leu Val Asn			
300	305	310	
ggt aca gca tgt gga gag ata aaa att aca gat ttt ggt ctt tcc aag			1013
Gly Thr Ala Cys Gly Glu Ile Lys Ile Thr Asp Phe Gly Leu Ser Lys			
315	320	325	
atc atg gat gat gat agc tac aat tca gtg gat ggc atg gag ctg acg			1061
Ile Met Asp Asp Asp Ser Tyr Asn Ser Val Asp Gly Met Glu Leu Thr			
330	335	340	
tca caa gga gct ggt act tat tgg tat tta cca cca gag tgt ttt gtg			1109
Ser Gln Gly Ala Gly Thr Tyr Trp Tyr Leu Pro Pro Glu Cys Phe Val			
345	350	355	360
gtt ggg aaa gag cca cca aag atc tca aat aaa gtc gat gtt tgg tca			1157
Val Gly Lys Glu Pro Pro Lys Ile Ser Asn Lys Val Asp Val Trp Ser			
365	370	375	
gtg ggt gtg atc ttc tac cag tgt ctt tat ggg agg aag cct ttt ggg			1205
Val Gly Val Ile Phe Tyr Gln Cys Leu Tyr Gly Arg Lys Pro Phe Gly			
380	385	390	
cat aac cag tcc cag caa gat att cta caa gag aat act att ctt aag			1253
His Asn Gln Ser Gln Gln Asp Ile Leu Gln Glu Asn Thr Ile Leu Lys			
395	400	405	
gct act gaa gta cag ttc ccg cca aag cca gta gta aca cct gaa gca			1301

Ala Thr Glu Val Gln Phe Pro Pro Lys Pro Val Val Thr Pro Glu Ala
 410 415 420
 aag gca ttt agc agg aga tgt ctg gcc tat cga aag gaa gat cgc att 1349
 Lys Ala Phe Ser Arg Arg Cys Leu Ala Tyr Arg Lys Glu Asp Arg Ile
 425 430 435 440
 gat gtg cag cag ctg gcc tgt gac ccc tac ttg ttg cct cac atc cga 1397
 Asp Val Gln Gln Leu Ala Cys Asp Pro Tyr Leu Leu Pro His Ile Arg
 445 450 455
 aag tca gtc tcc aca agt agc cct gca gga gct gct att gca tca acc 1445
 Lys Ser Val Ser Thr Ser Ser Pro Ala Gly Ala Ala Ile Ala Ser Thr
 460 465 470
 tct ggg gca tcc aat aac agt tct tct aat tga gaccaactcc taaggccaca 1498
 Ser Gly Ala Ser Asn Asn Ser Ser Ser Asn
 475 480
 aactgttgag cacacacagt ggacatacgg cattcagcag tgggtttgga acatagtgaa 1558
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 ataaaaattta ggtaacatct cctgaaaaaa aaaaaaagaa aaaaaaaaaa aaaaaaaa 1976

<210> 458

<211> 482

<212> PRT

<213> Mus musculus

<400> 458

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 35 40 45
 Ala Phe Gln Asn Leu Ile Lys Gln Gln Glu Arg Ile Asn Ser Gln Arg
 50 55 60
 Glu Glu Ile Glu Arg Gln Arg Lys Met Leu Ala Lys Arg Lys Pro Pro
 65 70 75 80
 Ala Met Gly Gln Ala Pro Pro Ala Thr Asn Glu Gln Lys Gln Arg Lys
 85 90 95
 Ser Lys Thr Asn Gly Ala Glu Asn Glu Thr Leu Thr Leu Ala Glu Tyr
 100 105 110
 His Glu Gln Glu Glu Ile Phe Lys Leu Arg Leu Gly His Leu Lys Lys
 115 120 125
 Glu Glu Ala Glu Ile Gln Ala Glu Leu Glu Arg Leu Glu Arg Val Arg
 130 135 140
 Asn Leu His Ile Arg Glu Leu Lys Arg Ile His Asn Glu Asp Asn Ser
 145 150 155 160
 Gln Phe Lys Asp His Pro Thr Leu Asn Asp Arg Tyr Leu Leu Leu His
 165 170 175
 Leu Leu Gly Arg Gly Gly Phe Ser Glu Val Tyr Lys Ala Phe Asp Leu
 180 185 190
 Thr Glu Gln Arg Tyr Val Ala Val Lys Ile His Gln Leu Asn Lys Asn
 195 200 205
 Trp Arg Asp Glu Lys Lys Glu Asn Tyr His Lys His Ala Cys Arg Glu
 210 215 220
 Tyr Arg Ile His Lys Glu Leu Asp His Pro Arg Ile Val Lys Leu Tyr

225	230	235	240
Asp Tyr Phe Ser Leu Asp Thr Asp Ser Phe Cys Thr Val Leu Glu Tyr			
245	250	255	
Cys Glu Gly Asn Asp Leu Asp Phe Tyr Leu Lys Gln His Lys Leu Met			
260	265	270	
Ser Glu Lys Glu Ala Arg Ser Ile Ile Met Gln Ile Val Asn Ala Leu			
275	280	285	
Lys Tyr Leu Asn Glu Ile Lys Pro Pro Ile Ile His Tyr Asp Leu Lys			
290	295	300	
Pro Gly Asn Ile Leu Leu Val Asn Gly Thr Ala Cys Gly Glu Ile Lys			
305	310	315	320
Ile Thr Asp Phe Gly Leu Ser Lys Ile Met Asp Asp Asp Ser Tyr Asn			
325	330	335	
Ser Val Asp Gly Met Glu Leu Thr Ser Gln Gly Ala Gly Thr Tyr Trp			
340	345	350	
Tyr Leu Pro Pro Glu Cys Phe Val Val Gly Lys Glu Pro Pro Lys Ile			
355	360	365	
Ser Asn Lys Val Asp Val Trp Ser Val Gly Val Ile Phe Tyr Gln Cys			
370	375	380	
Leu Tyr Gly Arg Lys Pro Phe Gly His Asn Gln Ser Gln Gln Asp Ile			
385	390	395	400
Leu Gln Glu Asn Thr Ile Leu Lys Ala Thr Glu Val Gln Phe Pro Pro			
405	410	415	
Lys Pro Val Val Thr Pro Glu Ala Lys Ala Phe Ser Arg Arg Cys Leu			
420	425	430	
Ala Tyr Arg Lys Glu Asp Arg Ile Asp Val Gln Gln Leu Ala Cys Asp			
435	440	445	
Pro Tyr Leu Leu Pro His Ile Arg Lys Ser Val Ser Thr Ser Ser Pro			
450	455	460	

Ala Gly Ala Ala Ile Ala Ser Thr Ser Gly Ala Ser Asn Asn Ser Ser
 465 470 475 480
 Ser Asn

<210> 459

<211> 72

<212> DNA

<213> Mus musculus

<400> 459

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<210> 460

<211> 2069

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (657).. (1979)

<400> 460

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 ctaccttgca acaaaataat tgcaccaact cctcagcgcc gattccgccc acagagagtc 240
 ccggagccag agtcgcttgg gccttgcact gcaggaaagg gacttaggcg ctagagacga 300
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gggtggggga aagacttgcc ccggaggcgg cgagaaactt gcgtttggaa gatactccgg 420
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 cacttcagcg gtgagggagg acggagggcc tcggggactc taggttggcg gcgggaggcg 540
 gccgccctgg cccgcgcgcc gctcagggga ccctgggtctc cgccccgggg agcccgagcagg 600
 cccggcgacc gcgccgcgag cgtgtgagcg cgcgtgggcg ccggcaagcc ggggcc atg 659

Met

1

gta caa cag acc aac aac gcg gag aac act gag gct ctg ctg gcc ggg 707
 Val Gln Gln Thr Asn Asn Ala Glu Asn Thr Glu Ala Leu Leu Ala Gly

5

10

15

gag agc tcg gac tcg ggc gcc ggc ctg gag ctg ggc atc gcg tcc tcc 755
 Glu Ser Ser Asp Ser Gly Ala Gly Leu Glu Leu Gly Ile Ala Ser Ser

20

25

30

ccg acg cct ggc tcc acc gcg tcg acg ggc ggc aag gcg gac gac ccc 803
 Pro Thr Pro Gly Ser Thr Ala Ser Thr Gly Gly Lys Ala Asp Asp Pro

35

40

45

agc tgg tgc aag acg ccc agt ggc cac atc aag cgg ccc atg aac gcc 851
 Ser Trp Cys Lys Thr Pro Ser Gly His Ile Lys Arg Pro Met Asn Ala

50

55

60

65

ttt atg gtg tgg tcg cag atc gag cgg cgc aag atc atg gag cag tcg 899
 Phe Met Val Trp Ser Gln Ile Glu Arg Arg Lys Ile Met Glu Gln Ser

70

75

80

ccc gac atg cac aac gcc gag atc tcc aag cgg cta ggc aaa cgc tgg 947
 Pro Asp Met His Asn Ala Glu Ile Ser Lys Arg Leu Gly Lys Arg Trp

85

90

95

aag ctg ctc aag gac agc gac aag att ccg ttc atc cag gag gcg gag 995
 Lys Leu Leu Lys Asp Ser Asp Lys Ile Pro Phe Ile Gln Glu Ala Glu

100

105

110

cgc ctg cgc ctc aag cac atg gct gac tac cct gac tac aag tac cgg 1043

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 115 120 125
 ccg cga aag aag gtg aag tcg ggc aac gcg ggc gcg gga tcg gcg gcc 1091
 Pro Arg Lys Lys Val Lys Ser Gly Asn Ala Gly Ala Gly Ser Ala Ala
 130 135 140 145
 aca gcc aag cca ggg gag aag ggc gac aag gtc gcg ggc agc agc ggc 1139
 Thr Ala Lys Pro Gly Glu Lys Gly Asp Lys Val Ala Gly Ser Ser Gly
 150 155 160
 cac gcg gga agc agc cac gcg ggg ggt ggc gcg ggc ggc acg tcc aag 1187
 His Ala Gly Ser Ser His Ala Gly Gly Gly Ala Gly Gly Thr Ser Lys
 165 170 175
 ccc act ccc aag aag agc tgt ggc ccc aag gtg gcg ggc agc tcg gtc 1235
 Pro Thr Pro Lys Lys Ser Cys Gly Pro Lys Val Ala Gly Ser Ser Val
 180 185 190
 ggc aag ccc cac gct aag ctg gtc ccg gcg ggc ggc agc aag gcg gct 1283
 Gly Lys Pro His Ala Lys Leu Val Pro Ala Gly Gly Ser Lys Ala Ala
 195 200 205
 gca tcg ttc tct cca gag caa gct gcc ctg ctg ccc ctg ggg gag ccc 1331
 Ala Ser Phe Ser Pro Glu Gln Ala Ala Leu Leu Pro Leu Gly Glu Pro
 210 215 220 225
 acg gcc gtc tac aag gtg cgg act ccc cag ctg gcc act ccg gcc gcc 1379
 Thr Ala Val Tyr Lys Val Arg Thr Pro Gln Leu Ala Thr Pro Ala Ala
 230 235 240
 tcc tcc tcg ccg tcc agt gcg ctg gcc acc cca gcc aaa cac cct gcc 1427
 Ser Ser Ser Pro Ser Ser Ala Leu Ala Thr Pro Ala Lys His Pro Ala
 245 250 255
 gac aag aaa gtg aag cac gtc tac ctg ttt gga agc ctg ggc gct tcg 1475
 Asp Lys Lys Val Lys His Val Tyr Leu Phe Gly Ser Leu Gly Ala Ser
 260 265 270

gcg tct ccc gtc ggg ggc ctg ggt gcg tgc gcc gac ccc agt gat cca 1523
 Ala Ser Pro Val Gly Gly Leu Gly Ala Cys Ala Asp Pro Ser Asp Pro
 275 280 285
 ctg ggg ttg tac gaa gat gga ggc ccg gga tgc tcg ccc gat ggc cgg 1571
 Leu Gly Leu Tyr Glu Asp Gly Gly Pro Gly Cys Ser Pro Asp Gly Arg
 290 295 300 305
 agt ctg agc ggc cgc agc agc gca gca tca tcg cca gcc gcc agc cga 1619
 Ser Leu Ser Gly Arg Ser Ser Ala Ala Ser Ser Pro Ala Ala Ser Arg
 310 315 320
 tcg ccc gct gac cac cgc ggc tac gcc agc cta cgc gca gcc tcg ccc 1667
 Ser Pro Ala Asp His Arg Gly Tyr Ala Ser Leu Arg Ala Ala Ser Pro
 325 330 335
 gcc ccg tcc agc gcg ccc tcg cac gcg tcc tcc tcg ctc tcc tcg tcc 1715
 Ala Pro Ser Ser Ala Pro Ser His Ala Ser Ser Ser Leu Ser Ser Ser
 340 345 350
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 Ser Ser Ser Ser Ser Gly Ser Ser Ser Ser Asp Asp Glu Phe Glu Asp
 355 360 365
 gac ctg ctc gac ctg aac ccc agc tca aac ttt gag agc atg tcc ctg 1811
 Asp Leu Leu Asp Leu Asn Pro Ser Ser Asn Phe Glu Ser Met Ser Leu
 370 375 380 385
 ggc agt ttc agc tcc tca tcg gcg ctc gat cgg gac ctg gat ttt aac 1859
 Gly Ser Phe Ser Ser Ser Ser Ala Leu Asp Arg Asp Leu Asp Phe Asn
 390 395 400
 ttc gaa ccc ggc tca ggc tcc cac ttc gaa ttc ccg gac tat tgc acg 1907
 Phe Glu Pro Gly Ser Gly Ser His Phe Glu Phe Pro Asp Tyr Cys Thr
 405 410 415
 ccc gag gtg agc gag atg atc tcg gga gat tgg ctg gag tcc agc atc 1955
 Pro Glu Val Ser Glu Met Ile Ser Gly Asp Trp Leu Glu Ser Ser Ile

420 425 430
 tct aac ctg gtc ttc acc tac tga agggagcgcg ggccggggag aaggtgggcc 2009
 Ser Asn Leu Val Phe Thr Tyr
 435 440
 aagaggcagg agaggagaga gggaaaaaag aaacaaaaaa caaacaaaaa aaaaaaaga 2069

<210> 461

<211> 440

<212> PRT

<213> Mus musculus

<400> 461

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 20 25 30
 Ser Pro Thr Pro Gly Ser Thr Ala Ser Thr Gly Gly Lys Ala Asp Asp
 35 40 45
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aggattgtaa tactatttag gaagttgaac tctgtagtac ataataggag gtaggattga			1011
ggtaagtttt ttggigtgtt tattttgttt tgtttcattt tggtttggtt tggtttttga			1071
agttatgtga tttttcacat ttaaatcttt tttctttttt acatgttttc tcttgatcat			1131
caattttaa atgtacaacca tgtaaactac ttctcttggt agatagattt tcacctagac			1191
ttttttttccc aaatcagaaa aaaaatacac actaaataaa gcagcaataa aatataaatc			1251
attctatttg agagaaatgc attgttttct gccagtggat attttctttg aaagtttgca			1311
gactgagagg agagaggcag agcaacgatg tagtgaaatg ttgatctttg tttttttttt			1371
tttttttaag ataagattga aacatgaaat cctttcactt tggcagaaaa acatttggtt			1431
tcttgatgaa attattttta catctgagga aaaaaatcta ggaaaataaa acaagtgatg			1491
ctgaattaaa aaaaaaaaaa aaa			1514

<210> 464

<211> 168

<212> PRT

<213> Mus musculus

<400> 464

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 Gly Lys Lys Glu Lys Pro Glu Lys Lys Val Lys Lys Ser Asp Cys Gly
 35 40 45
 Glu Trp Gln Trp Ser Val Cys Val Pro Thr Ser Gly Asp Cys Gly Leu
 50 55 60
 Gly Thr Arg Glu Gly Thr Arg Thr Gly Ala Glu Cys Lys Gln Thr Met
 65 70 75 80
 Lys Thr Gln Arg Cys Lys Ile Pro Cys Asn Trp Lys Lys Gln Phe Gly
 85 90 95
 Ala Glu Cys Lys Tyr Gln Phe Gln Ala Trp Gly Glu Cys Asp Leu Asn
 100 105 110
 Thr Ala Leu Lys Thr Arg Thr Gly Ser Leu Lys Arg Ala Leu His Asn
 115 120 125
 Ala Asp Cys Gln Lys Thr Val Thr Ile Ser Lys Pro Cys Gly Lys Leu
 130 135 140
 Thr Lys Pro Lys Pro Gln Ala Glu Ser Lys Lys Lys Lys Lys Glu Gly
 145 150 155 160
 Lys Lys Gln Glu Lys Met Leu Asp
 165

<210> 465

<211> 153

<212> DNA

<213> Mus musculus

<400> 465

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 atattaccag gagactgaag tacatcaaaa acaatccaga aaattaccac gtcctatgaa 120
 gatcgggtgga aactgcaaag tactgcccgc gct 153

<210> 466

<211> 1499

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (61).. (1293)

<400> 466

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 atg gaa cct ccc cca gct ccg ggg ccg gag cgg ctc ttt gac tcg cac 108
 Met Glu Pro Pro Pro Ala Pro Gly Pro Glu Arg Leu Phe Asp Ser His
 1 5 10 15
 cgg ctc ccg agt gac ggc ttc ctg ctg ctc gcg cta ctg ctc tac gcg 156
 Arg Leu Pro Ser Asp Gly Phe Leu Leu Leu Ala Leu Leu Leu Tyr Ala
 20 25 30
 ccg gtc ggc ctc tgc ctc ctg gtc ctg cga ctc ttc ctc ggg ctc cac 204
 Pro Val Gly Leu Cys Leu Leu Val Leu Arg Leu Phe Leu Gly Leu His

35	40	45	
gtc ttc ctg gtc agc tgc gct ctg ccc gac agc gtc ctc cgc agg ttc	252		
Val Phe Leu Val Ser Cys Ala Leu Pro Asp Ser Val Leu Arg Arg Phe			
50	55	60	
gtg gta cga acc atg tgt gcg gtc ctg ggg ctc gtg gcc cgg cag gag	300		
Val Val Arg Thr Met Cys Ala Val Leu Gly Leu Val Ala Arg Gln Glu			
65	70	75	80
gac tcc gga ctc cgc gat cac cgc gtc agg gtc ctt att tcc aac cac	348		
Asp Ser Gly Leu Arg Asp His Arg Val Arg Val Leu Ile Ser Asn His			
85	90	95	
gta aca cct ttt gac cac aac ata gtc aac ctc ctc acc acc tgt agc	396		
Val Thr Pro Phe Asp His Asn Ile Val Asn Leu Leu Thr Thr Cys Ser			
100	105	110	
acc cct cta ctc aat agt ccc ccc agc ttt gtg tgt tgg tct cgg ggc	444		
Thr Pro Leu Leu Asn Ser Pro Pro Ser Phe Val Cys Trp Ser Arg Gly			
115	120	125	
ttc atg gag atg gat agg cgg gtg gag ttg gtg gag tca ctc aag aaa	492		
Phe Met Glu Met Asp Arg Arg Val Glu Leu Val Glu Ser Leu Lys Lys			
130	135	140	
ttc tgt gct tcc acg agg ctt ccg ccc aca cct ttg ctg ctc ttc ccc	540		
Phe Cys Ala Ser Thr Arg Leu Pro Pro Thr Pro Leu Leu Leu Phe Pro			
145	150	155	160
gag gaa gag gcc acc aat ggc cga gaa ggg ctg ctg cgt ttc agt tcg	588		
Glu Glu Glu Ala Thr Asn Gly Arg Glu Gly Leu Leu Arg Phe Ser Ser			
165	170	175	
tgg cca ttt tct att cag gac gtg gta caa cct ctt acc ctg caa gtt	636		
Trp Pro Phe Ser Ile Gln Asp Val Val Gln Pro Leu Thr Leu Gln Val			
180	185	190	
cag aga ccc ctg gtc tct gtg acg gtg tca gat gcc tcc tgg gtc tca	684		

Gln Arg Pro Leu Val Ser Val Thr Val Ser Asp Ala Ser Trp Val Ser
 195 200 205
 gaa ctg ctg tgg tcc ctt ttt gtt cct ttc acg gtg tat caa gta agg 732
 Glu Leu Leu Trp Ser Leu Phe Val Pro Phe Thr Val Tyr Gln Val Arg
 210 215 220
 tgg ctt cat ccc att cgt cga cag cta ggg gaa gag agt gag gag ttt 780
 Trp Leu His Pro Ile Arg Arg Gln Leu Gly Glu Glu Ser Glu Glu Phe
 225 230 235 240
 gcg ctc cgt gta caa cag ctg gtg gcc aaa gaa ttg ggc cag ata ggg 828
 Ala Leu Arg Val Gln Gln Leu Val Ala Lys Glu Leu Gly Gln Ile Gly
 245 250 255
 aca cgg ctc act cca gca gac aaa gca gaa cac atg aag cga caa aga 876
 Thr Arg Leu Thr Pro Ala Asp Lys Ala Glu His Met Lys Arg Gln Arg
 260 265 270
 cac ccc aga tta cgc ccc cag tca gtg cag tct tct ttt cct tct cct 924
 His Pro Arg Leu Arg Pro Gln Ser Val Gln Ser Ser Phe Pro Ser Pro
 275 280 285
 ccc agc cct tct tct gat gtg cag ctg acc act ctc gct cac aga gtc 972
 Pro Ser Pro Ser Ser Asp Val Gln Leu Thr Thr Leu Ala His Arg Val
 290 295 300
 aag gag gtt ctg ccc cat gtg cca ttg aat gtc atc cag aga gac ctg 1020
 Lys Glu Val Leu Pro His Val Pro Leu Asn Val Ile Gln Arg Asp Leu
 305 310 315 320
 gcc agg act ggg tgt gta gac ttg acc atc aca aac ctg ctc gag ggg 1068
 Ala Arg Thr Gly Cys Val Asp Leu Thr Ile Thr Asn Leu Leu Glu Gly
 325 330 335
 gct gtg gct ttc atg cct gaa gat gtc act gag gga tct cag tcc ccg 1116
 Ala Val Ala Phe Met Pro Glu Asp Val Thr Glu Gly Ser Gln Ser Pro
 340 345 350

cct gca ccc tct gcc cca aag ttc ccc agc tgc ggc ctg gcg acc cct 1164
 Pro Ala Pro Ser Ala Pro Lys Phe Pro Ser Ser Gly Leu Ala Thr Pro
 355 360 365
 cag ccc aca gcc cta acg ttt gcc aag tct tcc tgg gcc cgt cag gag 1212
 Gln Pro Thr Ala Leu Thr Phe Ala Lys Ser Ser Trp Ala Arg Gln Glu
 370 375 380
 agc ctg cag gag cgc aag cag gca ctg tat gaa tat gca aga agg aga 1260
 Ser Leu Gln Glu Arg Lys Gln Ala Leu Tyr Glu Tyr Ala Arg Arg Arg
 385 390 395 400
 ttc aga gag aga cag gcc cag gag gct gaa tga gcccaaagga acaggatggt 1313
 Phe Arg Glu Arg Gln Ala Gln Glu Ala Glu
 405 410
 acccagagcc gcaggacgga gactgggggc agccctcacc cagctaacaa caggccggat 1373
 gagggtggg taaaaaggga gggatggggc tcccccaatc tcacattaaa ttcagggttt 1433
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 aggggg 1499

<210> 467

<211> 410

<212> PRT

<213> Mus musculus

<400> 467

Met Glu Pro Pro Pro Ala Pro Gly Pro Glu Arg Leu Phe Asp Ser His
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 Arg Leu Pro Ser Asp Gly Phe Leu Leu Leu Ala Leu Leu Leu Tyr Ala
 20 25 30
 Pro Val Gly Leu Cys Leu Leu Val Leu Arg Leu Phe Leu Gly Leu His
 35 40 45

Val Phe Leu Val Ser Cys Ala Leu Pro Asp Ser Val Leu Arg Arg Phe
 50 55 60
 Val Val Arg Thr Met Cys Ala Val Leu Gly Leu Val Ala Arg Gln Glu
 65 70 75 80
 Asp Ser Gly Leu Arg Asp His Arg Val Arg Val Leu Ile Ser Asn His
 85 90 95
 Val Thr Pro Phe Asp His Asn Ile Val Asn Leu Leu Thr Thr Cys Ser
 100 105 110
 Thr Pro Leu Leu Asn Ser Pro Pro Ser Phe Val Cys Trp Ser Arg Gly
 115 120 125
 Phe Met Glu Met Asp Arg Arg Val Glu Leu Val Glu Ser Leu Lys Lys
 130 135 140
 Phe Cys Ala Ser Thr Arg Leu Pro Pro Thr Pro Leu Leu Leu Phe Pro
 145 150 155 160
 Glu Glu Glu Ala Thr Asn Gly Arg Glu Gly Leu Leu Arg Phe Ser Ser
 165 170 175
 Trp Pro Phe Ser Ile Gln Asp Val Val Gln Pro Leu Thr Leu Gln Val
 180 185 190
 Gln Arg Pro Leu Val Ser Val Thr Val Ser Asp Ala Ser Trp Val Ser
 195 200 205
 Glu Leu Leu Trp Ser Leu Phe Val Pro Phe Thr Val Tyr Gln Val Arg
 210 215 220
 Trp Leu His Pro Ile Arg Arg Gln Leu Gly Glu Glu Ser Glu Glu Phe
 225 230 235 240
 Ala Leu Arg Val Gln Gln Leu Val Ala Lys Glu Leu Gly Gln Ile Gly
 245 250 255
 Thr Arg Leu Thr Pro Ala Asp Lys Ala Glu His Met Lys Arg Gln Arg
 260 265 270
 His Pro Arg Leu Arg Pro Gln Ser Val Gln Ser Ser Phe Pro Ser Pro

275 280 285
 Pro Ser Pro Ser Ser Asp Val Gln Leu Thr Thr Leu Ala His Arg Val
 290 295 300
 Lys Glu Val Leu Pro His Val Pro Leu Asn Val Ile Gln Arg Asp Leu
 305 310 315 320
 Ala Arg Thr Gly Cys Val Asp Leu Thr Ile Thr Asn Leu Leu Glu Gly
 325 330 335
 Ala Val Ala Phe Met Pro Glu Asp Val Thr Glu Gly Ser Gln Ser Pro
 340 345 350
 Pro Ala Pro Ser Ala Pro Lys Phe Pro Ser Ser Gly Leu Ala Thr Pro
 355 360 365
 Gln Pro Thr Ala Leu Thr Phe Ala Lys Ser Ser Trp Ala Arg Gln Glu
 370 375 380
 Ser Leu Gln Glu Arg Lys Gln Ala Leu Tyr Glu Tyr Ala Arg Arg Arg
 385 390 395 400
 Phe Arg Glu Arg Gln Ala Gln Glu Ala Glu
 405 410

<210> 468

<211> 151

<212> DNA

<213> Mus musculus

<400> 468

ttccaaccag ttcaaagctt gttgtcttcg acactacgtt gcaagtcaaa aaggccttct 60
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 tttgtaggaa tgctcacgat tacagatttc a 151

<210> 469

<211> 2747

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (43).. (1689)

<400> 469

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                                     1
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Ala Thr Asn Pro Phe Asp Gln Asp Val Glu Lys Ala Thr Ser Glu Leu
   5              10              15              20
aat act gct gag gac tgg ggc ctc atc ttg gat att tgt gat aag gtt      150
Asn Thr Ala Glu Asp Trp Gly Leu Ile Leu Asp Ile Cys Asp Lys Val
          25              30              35
ggc caa tct cgc aca gga cct aaa gat tgt ctt cgt tcc att atg aga      198
Gly Gln Ser Arg Thr Gly Pro Lys Asp Cys Leu Arg Ser Ile Met Arg
          40              45              50
aga gtg aac cat aaa gac ccc cat gtt gct atg caa gcc tta act ctt      246
Arg Val Asn His Lys Asp Pro His Val Ala Met Gln Ala Leu Thr Leu
          55              60              65
ctg gga gca tgt gta tca aac tgt ggc aaa att ttt cac tta gaa gta      294
Leu Gly Ala Cys Val Ser Asn Cys Gly Lys Ile Phe His Leu Glu Val
          70              75              80
tgt tca aga gac ttt gct agt gaa gta agc aat gta tta aat aag ggt      342
Cys Ser Arg Asp Phe Ala Ser Glu Val Ser Asn Val Leu Asn Lys Gly

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85	90	95	100	
cat cct aaa gta tgt gaa aaa tta aag gct ctt atg gtt gaa tgg aca	390			
His Pro Lys Val Cys Glu Lys Leu Lys Ala Leu Met Val Glu Trp Thr				
105	110	115		
gat gaa ttt aag aat gat cca cag ctt agt ctg ata tcg gca atg atc	438			
Asp Glu Phe Lys Asn Asp Pro Gln Leu Ser Leu Ile Ser Ala Met Ile				
120	125	130		
aag aac ctt aag gaa caa ggt gta aca ttc cca gct att ggc tct cag	486			
Lys Asn Leu Lys Glu Gln Gly Val Thr Phe Pro Ala Ile Gly Ser Gln				
135	140	145		
gct gca gaa caa gca aaa gca agc cca gct ctc gta gcc aag gac cct	534			
Ala Ala Glu Gln Ala Lys Ala Ser Pro Ala Leu Val Ala Lys Asp Pro				
150	155	160		
ggg act gtg gct acc aaa aag gaa gaa gaa gat tta gcc aaa gct att	582			
Gly Thr Val Ala Thr Lys Lys Glu Glu Glu Asp Leu Ala Lys Ala Ile				
165	170	175	180	
gag ttg tcc ctg aag gag caa agg cag cag tca gcc ccc gtg tcc acg	630			
Glu Leu Ser Leu Lys Glu Gln Arg Gln Gln Ser Ala Pro Val Ser Thr				
185	190	195		
ctg tac ccc agc aca tct aac ctc ctc act aac cac cag cac gaa ggc	678			
Leu Tyr Pro Ser Thr Ser Asn Leu Leu Thr Asn His Gln His Glu Gly				
200	205	210		
agg aaa gtc cgc gcc gtg tac gat ttt gaa gcc gct gag gat aat gag	726			
Arg Lys Val Arg Ala Val Tyr Asp Phe Glu Ala Ala Glu Asp Asn Glu				
215	220	225		
ctt acc ttt aaa gct gga gaa atc att aca gtc ctt gat gac agt gat	774			
Leu Thr Phe Lys Ala Gly Glu Ile Ile Thr Val Leu Asp Asp Ser Asp				
230	235	240		
ccc aac tgg tgg aaa ggt gaa acc cat caa ggc gtg ggg ctt ttt cct	822			

Pro Asn Trp Trp Lys Gly Glu Thr His Gln Gly Val Gly Leu Phe Pro
 245 250 255 260
 tct aat ttt gta act gca gat ctt act gct gaa cca gaa atg att aaa 870
 Ser Asn Phe Val Thr Ala Asp Leu Thr Ala Glu Pro Glu Met Ile Lys
 265 270 275
 aca gag aag aag acg gta cag ttc aat gat gat gtt cag ata gag aca 918
 Thr Glu Lys Lys Thr Val Gln Phe Asn Asp Asp Val Gln Ile Glu Thr
 280 285 290
 ata gaa cca gaa cca gaa cca gcc ttt att gat gag gat aaa atg gac 966
 Ile Glu Pro Glu Pro Glu Pro Ala Phe Ile Asp Glu Asp Lys Met Asp
 295 300 305
 cag ttg tta cag atg ttg caa agt aca gat cct agt gat aat cag cca 1014
 Gln Leu Leu Gln Met Leu Gln Ser Thr Asp Pro Ser Asp Asn Gln Pro
 310 315 320
 gac ttg cca gag ctg ctt cat ctt gaa gca atg tgt cac cag atg gga 1062
 Asp Leu Pro Glu Leu Leu His Leu Glu Ala Met Cys His Gln Met Gly
 325 330 335 340
 cct ctc att gat gaa aag ctg gaa gat att gat aga aaa cat tca gaa 1110
 Pro Leu Ile Asp Glu Lys Leu Glu Asp Ile Asp Arg Lys His Ser Glu
 345 350 355
 ctg tca gaa cta aac gtg aag gtg atg gaa gct ctc tca ctg tat acg 1158
 Leu Ser Glu Leu Asn Val Lys Val Met Glu Ala Leu Ser Leu Tyr Thr
 360 365 370
 aag tta atg aat gaa gac cca atg tac tct atg tat gca aaa tta cag 1206
 Lys Leu Met Asn Glu Asp Pro Met Tyr Ser Met Tyr Ala Lys Leu Gln
 375 380 385
 agt cag cag tac tat ctg cag tcg tcg gct gtc tct gct tcc cag gta 1254
 Ser Gln Gln Tyr Tyr Leu Gln Ser Ser Ala Val Ser Ala Ser Gln Val
 390 395 400

tat cca ggg cct gcg cag agc ggt acc tac ctg gtt gca ggg agt gca	1302
Tyr Pro Gly Pro Ala Gln Ser Gly Thr Tyr Leu Val Ala Gly Ser Ala	
405 410 415 420	
cag atg acc cat ctg cag agc tac agc ctt ccc cca gag cag ctg tct	1350
Gln Met Thr His Leu Gln Ser Tyr Ser Leu Pro Pro Glu Gln Leu Ser	
425 430 435	
tct atc agc caa gga gca gtt cca tcc tct gca aat caa gct ctt cct	1398
Ser Ile Ser Gln Gly Ala Val Pro Ser Ser Ala Asn Gln Ala Leu Pro	
440 445 450	
agt cag cag acc cag gct tct tac ccg aat gca atg gtt agt tct gtt	1446
Ser Gln Gln Thr Gln Ala Ser Tyr Pro Asn Ala Met Val Ser Ser Val	
455 460 465	
caa gga aat tcg tat cct agc cag gct tca ata tat agt cct cct gct	1494
Gln Gly Asn Ser Tyr Pro Ser Gln Ala Ser Ile Tyr Ser Pro Pro Ala	
470 475 480	
gct gct gct gct gcc gct gct gct gct gta gta cct gtt cct gta cct	1542
Ala Ala Ala Ala Ala Ala Ala Ala Ala Val Val Pro Val Pro Val Pro	
485 490 495 500	
gct gat gtc acc ata tac cag aat gca gga cct act atg tcc cag gtg	1590
Ala Asp Val Thr Ile Tyr Gln Asn Ala Gly Pro Thr Met Ser Gln Val	
505 510 515	
cca aac tat act tta aca tca tca acc ctg cct caa aca gga ggc agc	1638
Pro Asn Tyr Thr Leu Thr Ser Ser Thr Leu Pro Gln Thr Gly Gly Ser	
520 525 530	
caa cag cca cct cag cca cag caa gca tat tct cag aag gct ctg cta	1686
Gln Gln Pro Pro Gln Pro Gln Gln Ala Tyr Ser Gln Lys Ala Leu Leu	
535 540 545	
tag gacttgatgt tcctcttggt ggcatatttc cgctgaatgc cattgacaat	1739
gtaggagat tcattaacat cctaaaattt gcttttctc agcttataag agtctatctt	1799

ggtcaagttc aaatactcaa gaaggtagaa ctgtcttcaa ttgtcactga attttttagag 1859
 gaatgccctct accctgagga atgaaactac ttacaacatt tatttccttt cataatatga 1919
 agaattgtta caagattgtt gtgtgtctgt aaaattacct ggtctgcagc actcagaaga 1979
 tcaacaactg ctgtggccaa tgttatctgt acatgcattg acatgtaact ttgttagtga 2039
 ccattggaat tgcagtgggtg atcatgtgaa tatatttaac accgtgttaa attaatattac 2099
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 agtacactat ctttttaagc tacaagagaa cttaaattgta gcacactgac ctgaaggcat 2219
 tgtcctgtta tagtgtcaca ttaaattgaa cctttctttt actaattatg aacaaacat 2279
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 tagccacagt ttgggtgcaa ttagaggaga ataatgttcc ttttaaactt ttataatttg 2399
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 aagaagtaag ggcatgtgtt tcctttgtca tagttgccgt ggtgattagg gattaggctt 2519
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<210> 470

<211> 548

<212> PRT

<213> Mus musculus

<400> 470

Met	Pro	Leu	Phe	Ala	Thr	Asn	Pro	Phe	Asp	Gln	Asp	Val	Glu	Lys	Ala
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Thr	Ser	Glu	Leu	Asn	Thr	Ala	Glu	Asp	Trp	Gly	Leu	Ile	Leu	Asp	Ile
			20					25					30		
Cys	Asp	Lys	Val	Gly	Gln	Ser	Arg	Thr	Gly	Pro	Lys	Asp	Cys	Leu	Arg
		35					40						45		

Ser Ile Met Arg Arg Val Asn His Lys Asp Pro His Val Ala Met Gln
 50 55 60
 Ala Leu Thr Leu Leu Gly Ala Cys Val Ser Asn Cys Gly Lys Ile Phe
 65 70 75 80
 His Leu Glu Val Cys Ser Arg Asp Phe Ala Ser Glu Val Ser Asn Val
 85 90 95
 Leu Asn Lys Gly His Pro Lys Val Cys Glu Lys Leu Lys Ala Leu Met
 100 105 110
 Val Glu Trp Thr Asp Glu Phe Lys Asn Asp Pro Gln Leu Ser Leu Ile
 115 120 125
 Ser Ala Met Ile Lys Asn Leu Lys Glu Gln Gly Val Thr Phe Pro Ala
 130 135 140
 Ile Gly Ser Gln Ala Ala Glu Gln Ala Lys Ala Ser Pro Ala Leu Val
 145 150 155 160
 Ala Lys Asp Pro Gly Thr Val Ala Thr Lys Lys Glu Glu Glu Asp Leu
 165 170 175
 Ala Lys Ala Ile Glu Leu Ser Leu Lys Glu Gln Arg Gln Gln Ser Ala
 180 185 190
 Pro Val Ser Thr Leu Tyr Pro Ser Thr Ser Asn Leu Leu Thr Asn His
 195 200 205
 Gln His Glu Gly Arg Lys Val Arg Ala Val Tyr Asp Phe Glu Ala Ala
 210 215 220
 Glu Asp Asn Glu Leu Thr Phe Lys Ala Gly Glu Ile Ile Thr Val Leu
 225 230 235 240
 Asp Asp Ser Asp Pro Asn Trp Trp Lys Gly Glu Thr His Gln Gly Val
 245 250 255
 Gly Leu Phe Pro Ser Asn Phe Val Thr Ala Asp Leu Thr Ala Glu Pro
 260 265 270
 Glu Met Ile Lys Thr Glu Lys Lys Thr Val Gln Phe Asn Asp Asp Val

275	280	285
Gln Ile Glu Thr Ile Glu Pro Glu Pro Glu Pro Ala Phe Ile Asp Glu		
290	295	300
Asp Lys Met Asp Gln Leu Leu Gln Met Leu Gln Ser Thr Asp Pro Ser		
305	310	315
Asp Asn Gln Pro Asp Leu Pro Glu Leu Leu His Leu Glu Ala Met Cys		
325	330	335
His Gln Met Gly Pro Leu Ile Asp Glu Lys Leu Glu Asp Ile Asp Arg		
340	345	350
Lys His Ser Glu Leu Ser Glu Leu Asn Val Lys Val Met Glu Ala Leu		
355	360	365
Ser Leu Tyr Thr Lys Leu Met Asn Glu Asp Pro Met Tyr Ser Met Tyr		
370	375	380
Ala Lys Leu Gln Ser Gln Gln Tyr Tyr Leu Gln Ser Ser Ala Val Ser		
385	390	395
Ala Ser Gln Val Tyr Pro Gly Pro Ala Gln Ser Gly Thr Tyr Leu Val		
405	410	415
Ala Gly Ser Ala Gln Met Thr His Leu Gln Ser Tyr Ser Leu Pro Pro		
420	425	430
Glu Gln Leu Ser Ser Ile Ser Gln Gly Ala Val Pro Ser Ser Ala Asn		
435	440	445
Gln Ala Leu Pro Ser Gln Gln Thr Gln Ala Ser Tyr Pro Asn Ala Met		
450	455	460
Val Ser Ser Val Gln Gly Asn Ser Tyr Pro Ser Gln Ala Ser Ile Tyr		
465	470	475
Ser Pro Pro Ala Ala Ala Ala Ala Ala Ala Ala Ala Val Val Pro		
485	490	495
Val Pro Val Pro Ala Asp Val Thr Ile Tyr Gln Asn Ala Gly Pro Thr		
500	505	510

Met Ser Gln Val Pro Asn Tyr Thr Leu Thr Ser Ser Thr Leu Pro Gln
 515 520 525
 Thr Gly Gly Ser Gln Gln Pro Pro Gln Pro Gln Gln Ala Tyr Ser Gln
 530 535 540
 Lys Ala Leu Leu
 545

<210> 471

<211> 453

<212> DNA

<213> Mus musculus

<400> 471

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 gagccagtct acagcctgta tatctggacc tttaggggtga acatgactga ggctgcagtg 180
 gaggacctgc accactaccg caacctcagc gatttcttcc ggcgtaacgt gaagcctcag 240
 gcacggcccg tatgtggctt gcactgtgtg accagcccat cagatggcaa gaccttcacc 300
 tttagggcagg tgaagaactc tgagggtggag caggtaaagg gcgtaaccta ctccctggag 360
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 gactccttca gaaaccagct ggtcaccgga gaa 453

<210> 472

<211> 328

<212> DNA

<213> Mus musculus

<400> 472

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 gtaactagta tggtaaagcc ttgcaggaa gcagtggctt ccaatgccat aaaagataaa 180
 tccgggggag ccccatatg attgtaccca gggtagtaac ccctttgaag gaagcagtgg 240
 tcttgaatat tatattcgaa aacccccagc tgaaaaaccc aggatgtgtc ccatgtgtgg 300
 tagcgcttt gcaggaagga gtgatcta 328

<210> 473

<211> 3170

<212> DNA

<213> Mus musculus

<400> 473

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<213> Mus musculus

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<213> Mus musculus

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<222> (187).. (1386)

<400> 475

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ctg tgc gtg ttg ggc ggc ggt cac ctc tgc cat ccc ccg cac gtc ttt 276
Leu Cys Val Leu Gly Gly Gly His Leu Ser His Pro Pro His Val Phe
    15             20             25             30
ccc cag cgt cga cta gga gta cgc gag ccc cgc gac atg cag cgc gag 324
Pro Gln Arg Arg Leu Gly Val Arg Glu Pro Arg Asp Met Gln Arg Glu
          35             40             45
att cgg gag gtg ctg ggg ctg ccg ggg cgg ccc cga tcc cga gca ccg 372
Ile Arg Glu Val Leu Gly Leu Pro Gly Arg Pro Arg Ser Arg Ala Pro
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Val Gly Ala Ala Gln Gln Pro Ala Ser Ala Pro Leu Phe Met Leu Asp
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ctg tac cgt gcc atg acg gat gac agt ggc ggt ggg acc ccg cag cct 468
Leu Tyr Arg Ala Met Thr Asp Asp Ser Gly Gly Gly Thr Pro Gln Pro
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cac ttg gac cgt gct gac ctg att atg agc ttt gtc aac ata gtg gaa 516
His Leu Asp Arg Ala Asp Leu Ile Met Ser Phe Val Asn Ile Val Glu
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 130 135 140
 ttc cgg atc tac aaa gaa ccc agt acc cac ccg ctc aac aca acc ttc 660
 Phe Arg Ile Tyr Lys Glu Pro Ser Thr His Pro Leu Asn Thr Thr Phe
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 cac atc agc atg ttc gaa gtg gtc caa gag cac tcc aac agg gag tct 708
 His Ile Ser Met Phe Glu Val Val Gln Glu His Ser Asn Arg Glu Ser
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 His His Lys Asp Leu Gly Leu Arg Leu Tyr Val Glu Thr Glu Asp Gly
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 Arg Ser Arg Gln Pro Phe Met Val Gly Phe Phe Arg Ala Asn Gln Ser
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 Pro Val Arg Ala Pro Arg Thr Ala Arg Pro Leu Lys Lys Lys Gln Leu
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 Asn Gln Ile Asn Gln Leu Pro His Ser Asn Lys His Leu Gly Ile Leu
 275 280 285
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 Leu Tyr Val Ser Phe Arg Asp Leu Gly Trp Leu Asp Ser Val Ile Ala
 305 310 315
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 Pro Gln Gly Tyr Ser Ala Tyr Tyr Cys Ala Gly Glu Cys Ile Tyr Pro
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 Leu Asn Ser Cys Met Asn Ser Thr Asn His Ala Thr Met Gln Ala Leu
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 Val His Leu Met Lys Pro Asp Ile Ile Pro Lys Val Cys Cys Val Pro
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 Val Ile Leu Arg Arg Glu Arg Asn Met Val Val Gln Ala Cys Gly Cys
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<210> 476

<211> 399

<212> PRT

<213> Mus musculus

<400> 476

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Arg	Arg	Leu	Gly	Val	Arg	Glu	Pro	Arg	Asp	Met	Gln	Arg	Glu	Ile	Arg
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Glu	Val	Leu	Gly	Leu	Pro	Gly	Arg	Pro	Arg	Ser	Arg	Ala	Pro	Val	Gly
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	115		120		125
Leu Thr Gln Ile Pro Ala Gly Glu Ala Val Thr Ala Ala Glu Phe Arg					
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Ile Tyr Lys Glu Pro Ser Thr His Pro Leu Asn Thr Thr Phe His Ile					
145		150		155	160
Ser Met Phe Glu Val Val Gln Glu His Ser Asn Arg Glu Ser Asp Leu					
	165		170		175
Ser Phe Leu Asp Leu Gln Thr Leu Arg Ser Gly Asp Glu Gly Trp Leu					
	180		185		190
Val Leu Asp Ile Thr Ala Ala Ser Asp Arg Trp Leu Leu Asn His His					
	195		200		205
Lys Asp Leu Gly Leu Arg Leu Tyr Val Glu Thr Glu Asp Gly His Gly					
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Arg Gln Pro Phe Met Val Gly Phe Phe Arg Ala Asn Gln Ser Pro Val					
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Arg Ala Pro Arg Thr Ala Arg Pro Leu Lys Lys Lys Gln Leu Asn Gln					
	260		265		270
Ile Asn Gln Leu Pro His Ser Asn Lys His Leu Gly Ile Leu Asp Asp					
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Gly His Gly Ser His Gly Arg Glu Val Cys Arg Thr Gly Glu Leu Tyr					
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Val Ser Phe Arg Asp Leu Gly Trp Leu Asp Ser Val Ile Ala Pro Gln					
305		310		315	320

Ser Thr Gln Tyr Arg Cys Phe Ser Val Ser Met Leu Ala Gly Pro Asn
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 Asn Phe Ala Cys Met Thr Thr Gly Asp Val Ile Ala Ile Asn Tyr Asn
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 gaa aag atc tat gag ctg cgg gtg atg gag acc aaa cct gac aag gct 643
 Glu Lys Ile Tyr Glu Leu Arg Val Met Glu Thr Lys Pro Asp Lys Ala
 165 170 175

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 Gly Glu Ala Asp His Ser Gly Tyr Ala Gly Glu Val Gly Phe Arg Ala
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 Ala Phe Ser Gly Glu Gly Gln Ser Leu Arg Lys Lys Gly Arg Lys Pro
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<210> 478

<211> 307

<212> PRT

<213> Mus musculus

<400> 478

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Gly	Val	Leu	Glu	Phe	Val	Ala	Asp	Glu	Gly	Ile	Cys	Tyr	Leu	Pro	His
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Trp	Met	Met	Gln	Asn	Leu	Leu	Leu	Glu	Glu	Gly	Gly	Leu	Val	Gln	Val
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Glu	Ser	Val	Asn	Leu	Gln	Val	Ala	Thr	Tyr	Ser	Lys	Phe	Gln	Pro	Gln
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Ser	Pro	Asp	Phe	Leu	Asp	Ile	Thr	Asn	Pro	Lys	Ala	Val	Leu	Glu	Asn
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 180 185 190
 Ala Pro Leu Gly Tyr Lys Glu Pro Lys Arg Pro Val Gln His Glu Glu
 195 200 205
 Ser Ile Glu Gly Glu Ala Asp His Ser Gly Tyr Ala Gly Glu Val Gly
 210 215 220
 Phe Arg Ala Phe Ser Gly Ser Gly Asn Arg Leu Asp Gly Lys Lys Lys
 225 230 235 240
 Gly Val Glu Pro Ser Pro Ser Pro Ile Lys Pro Gly Asp Ile Lys Arg
 245 250 255
 Gly Ile Pro Asn Tyr Glu Phe Lys Leu Gly Lys Ile Thr Phe Ile Arg
 260 265 270
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<210> 479

<211> 6730

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (580).. (6234)

<400> 479

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cctgtaggga tggagcagag gaggttctat ctgcgggcc atg cag gct gac aac 594

Met Gln Ala Asp Asn

1

5

ctg tct gtg gtt ctg ctc tca gtg gcc tgg ctc ctg cta gct cgt ggg 642
Leu Ser Val Val Leu Leu Ser Val Ala Trp Leu Leu Leu Ala Arg Gly

10

15

20

acc aca ggt atg cct cag tac agc act ttc cac tct gag aat cgt gac 690
Thr Thr Gly Met Pro Gln Tyr Ser Thr Phe His Ser Glu Asn Arg Asp

25

30

35

tgg act ttc aac cat ttg act gta cac cga aga aca ggg gct gtg tat 738
Trp Thr Phe Asn His Leu Thr Val His Arg Arg Thr Gly Ala Val Tyr

40

45

50

gtg ggg gct atc aat cgt gtc tac aag ttg act ggc aac ctc acc atc 786
Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr Gly Asn Leu Thr Ile

55

60

65

cag gtg gct cac aag aca ggg cca gaa gag gac aac aag gct tgc tac 834
Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp Asn Lys Ala Cys Tyr

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Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val Leu Thr Leu Thr Asn				
90	95	100		
aat gtc aac aaa cta ctg atc att gac tac tct gag aat cgc ctg ctg				930
Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser Glu Asn Arg Leu Leu				
105	110	115		
gcc tgc gga agc ctc tac cag ggt gtt tgc aag ctc ctg cga cta gat				978
Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys Leu Leu Arg Leu Asp				
120	125	130		
gac ctc ttc atc ctg gtg gag cca tcc cac aag aag gaa cac tac ttg				1026
Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys Lys Glu His Tyr Leu				
135	140	145		
tcc agt gtc aat aag aca ggc acc atg tat ggt gtg att gtg cgc tct				1074
Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly Val Ile Val Arg Ser				
150	155	160	165	
gag ggg gaa gat ggc aag ctt ttt atc ggc act gct gtg gat ggc aag				1122
Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr Ala Val Asp Gly Lys				
170	175	180		
cag gat tac ttc cct act ctg tcc agc cgc aag ctg ccc cgt gac cct				1170
Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys Leu Pro Arg Asp Pro				
185	190	195		
gag tct tca gca atg ctg gac tat gag ctc cac agt gat ttt gtc tcc				1218
Glu Ser Ser Ala Met Leu Asp Tyr Glu Leu His Ser Asp Phe Val Ser				
200	205	210		
tcc ctc atc aag att ccc tct gac acc cta gcc ctg gtc tct cac ttc				1266
Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala Leu Val Ser His Phe				
215	220	225		
gac atc ttc tac atc tat ggc ttt gcc agt ggg ggg ttt gtc tac ttt				1314

Asp Ile Phe Tyr Ile Tyr Gly Phe Ala Ser Gly Gly Phe Val Tyr Phe
 230 235 240 245
 ctc act gtc cag cca gag acc cct gac ggc atg gcc atc aat tca gct 1362
 Leu Thr Val Gln Pro Glu Thr Pro Asp Gly Met Ala Ile Asn Ser Ala
 250 255 260
 gga gac ctc ttc tat acc tca aga att gtg cgt ctc tgc aag gat gac 1410
 Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg Leu Cys Lys Asp Asp
 265 270 275
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 Pro Lys Phe His Ser Tyr Val Ser Leu Pro Phe Gly Cys Thr Arg Ala
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 Gly Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr Leu Ala Lys Pro Gly
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 Glu Ala Leu Ala Gln Ala Phe Asn Ile Ser Ser Asp Glu Asp Val Leu
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 Phe Ala Ile Phe Ser Lys Gly Gln Lys Gln Tyr His His Pro Pro Asp
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 gac tct gcc ctc tgt gcc ttc ccc atc cgg gcc atc aac ttg caa atc 1650
 Asp Ser Ala Leu Cys Ala Phe Pro Ile Arg Ala Ile Asn Leu Gln Ile
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 Lys Glu Arg Leu Gln Ser Cys Tyr His Gly Glu Gly Asn Leu Glu Leu
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1276/2644

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atg agc ctt gag gta cac ccc aac agc atc tct gtg tca gat cac agc			2274
Met Ser Leu Glu Val His Pro Asn Ser Ile Ser Val Ser Asp His Ser			
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cgg ctg ctc agc ctg gtt gtg aat gat gct ccc aac ctc tct gaa ggt			2322
Arg Leu Leu Ser Leu Val Val Asn Asp Ala Pro Asn Leu Ser Glu Gly			
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att gct tgt gcc ttt ggg aat ctg act gag gtg gag gga cag gta tct			2370
Ile Ala Cys Ala Phe Gly Asn Leu Thr Glu Val Glu Gly Gln Val Ser			
585	590	595	
ggg agt caa gtc atc tgc atc tca cct gga ccc aag gat gtc cct gtc			2418
Gly Ser Gln Val Ile Cys Ile Ser Pro Gly Pro Lys Asp Val Pro Val			
600	605	610	
atc cct ctg gat caa gac tgg ttt ggc cta gag ctg cag ctg aga tcc			2466
Ile Pro Leu Asp Gln Asp Trp Phe Gly Leu Glu Leu Gln Leu Arg Ser			
615	620	625	
aaa gag aca gga aag atc ttt gtc agc acc gaa ttc aag ttc tat aac			2514
Lys Glu Thr Gly Lys Ile Phe Val Ser Thr Glu Phe Lys Phe Tyr Asn			
630	635	640	645
tgc agt gcc cac caa ctg tgc ctg tcc tgt gtt aac agc gcc ttc cgc			2562
Cys Ser Ala His Gln Leu Cys Leu Ser Cys Val Asn Ser Ala Phe Arg			
650	655	660	
tgc cat tgg tgc aag tac cgt aac ctc tgc aca cat gac ccc act acc			2610
Cys His Trp Cys Lys Tyr Arg Asn Leu Cys Thr His Asp Pro Thr Thr			
665	670	675	
tgt tcc ttc cag gaa ggc agg atc aat gtt tca gag gac tgt ccc cag			2658
Cys Ser Phe Gln Glu Gly Arg Ile Asn Val Ser Glu Asp Cys Pro Gln			
680	685	690	
ctc gtg ccc acg gag gag att ctg atc cca gtt ggg gaa gta aaa cca			2706

Leu Val Pro Thr Glu Glu Ile Leu Ile Pro Val Gly Glu Val Lys Pro
 695 700 705
 atc acc ctt aag gcc cga aac ctg ccc cag ccc cag tct ggc cag cga 2754
 Ile Thr Leu Lys Ala Arg Asn Leu Pro Gln Pro Gln Ser Gly Gln Arg
 710 715 720 725
 ggc tac gag tgt gtg ctc agc att caa ggg gct gtc cac cgg gtc cct 2802
 Gly Tyr Glu Cys Val Leu Ser Ile Gln Gly Ala Val His Arg Val Pro
 730 735 740
 gcc ctg cgt ttc aac agt tcc agt gtg cag tgc caa aac agc tcg tac 2850
 Ala Leu Arg Phe Asn Ser Ser Ser Val Gln Cys Gln Asn Ser Ser Tyr
 745 750 755
 cag tat gat ggg atg gac atc agc aac cta gca gtg gac ttt gct gta 2898
 Gln Tyr Asp Gly Met Asp Ile Ser Asn Leu Ala Val Asp Phe Ala Val
 760 765 770
 gta tgg aat ggc aac ttc att att gac aac cct cag gac ctg aaa gta 2946
 Val Trp Asn Gly Asn Phe Ile Ile Asp Asn Pro Gln Asp Leu Lys Val
 775 780 785
 cat ctc tac aag tgt gca gcc cag cgg gaa agc tgt ggt ctc tgc ctc 2994
 His Leu Tyr Lys Cys Ala Ala Gln Arg Glu Ser Cys Gly Leu Cys Leu
 790 795 800 805
 aag gct gac cac aag ttc gag tgt ggc tgg tgc agt ggt gag cgc aga 3042
 Lys Ala Asp His Lys Phe Glu Cys Gly Trp Cys Ser Gly Glu Arg Arg
 810 815 820
 tgt acc ctc cac cag cac tgc ccc agc act tct agc ccc tgg ctt gac 3090
 Cys Thr Leu His Gln His Cys Pro Ser Thr Ser Ser Pro Trp Leu Asp
 825 830 835
 tgg tcc agc cac aat gtc aag tgt tcc aac ccc caa atc aca gag att 3138
 Trp Ser Ser His Asn Val Lys Cys Ser Asn Pro Gln Ile Thr Glu Ile
 840 845 850

ttg aca gta tca gga cca cct gaa gga ggg act cgt gtg acc atc cat	3186
Leu Thr Val Ser Gly Pro Pro Glu Gly Gly Thr Arg Val Thr Ile His	
855 860 865	
ggc gtg aac ctg ggc ttg gac ttc tct gag att gct cac cat gtg cag	3234
Gly Val Asn Leu Gly Leu Asp Phe Ser Glu Ile Ala His His Val Gln	
870 875 880 885	
gtg gct gga gtg ccc tgc aca cct atc cca ggg gaa tac atc atc gct	3282
Val Ala Gly Val Pro Cys Thr Pro Ile Pro Gly Glu Tyr Ile Ile Ala	
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gag cag atc gtc tgt gag atg ggc cat gcc gtt ata ggt acc aca tct	3330
Glu Gln Ile Val Cys Glu Met Gly His Ala Val Ile Gly Thr Thr Ser	
905 910 915	
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920 925 930	
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Lys Ser His Gln Gln Tyr Thr Phe Val Asn Pro Ser Val Leu Ser Leu	
935 940 945	
agc ccg atc cgg gga cca gag tca gga ggt acc atg gtg acc atc aca	3474
Ser Pro Ile Arg Gly Pro Glu Ser Gly Gly Thr Met Val Thr Ile Thr	
950 955 960 965	
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Gly His Tyr Leu Gly Ala Gly Ser Ser Val Ala Val Tyr Leu Gly Asn	
970 975 980	
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Gln Thr Cys Glu Phe Tyr Gly Arg Ser Met Asn Glu Ile Val Cys Val	
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Ser Pro Pro Ser Ser Asn Gly Leu Gly Pro Val Pro Val Ser Val Ser	

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Val Asp Arg Ala Arg Val Asp Ser Ser Leu Gln Phe Glu Tyr Ile Asp			
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Asp Pro Arg Val Gln Arg Ile Glu Pro Glu Trp Ser Ile Thr Ser Gly			
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cac aca ccc cta acc atc aca ggc ttc aac ttg gat gtc att cag gag			3762
His Thr Pro Leu Thr Ile Thr Gly Phe Asn Leu Asp Val Ile Gln Glu			
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ccc agg gtc cga gtc aaa ttt aat ggc aaa gaa tct gtc aat gta tgc			3810
Pro Arg Val Arg Val Lys Phe Asn Gly Lys Glu Ser Val Asn Val Cys			
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Thr Val Val Asn Thr Thr Thr Leu Thr Cys Leu Ala Pro Ser Leu Thr			
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Ser Asp Tyr Arg Pro Gly Leu Asp Thr Val Glu Arg Pro Asp Glu Phe			
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Gly Phe Leu Phe Asn Asn Val Gln Ser Leu Leu Ile Tyr Asn Asp Thr			
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Lys Phe Ile Tyr Tyr Pro Asn Pro Thr Phe Glu Leu Leu Ser Pro Thr			
1130	1135	1140	
gga atc ttg gat cag aag cca ggc tca ccc atc atc ctg aag ggc aaa			4050
Gly Ile Leu Asp Gln Lys Pro Gly Ser Pro Ile Ile Leu Lys Gly Lys			
1145	1150	1155	
aat ctc tgt cct cct gcc tct gga ggg gcc aaa ctc aac tac aca gta			4098

Asn Leu Cys Pro Pro Ala Ser Gly Gly Ala Lys Leu Asn Tyr Thr Val
 1160 1165 1170
 atg att gga gag aca cct tgt aca gtc act gtg tct gag aca cag ctg 4146
 Met Ile Gly Glu Thr Pro Cys Thr Val Thr Val Ser Glu Thr Gln Leu
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 Leu Cys Glu Pro Pro Asn Leu Thr Gly Gln His Lys Val Met Val His
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 Val Gly Gly Met Val Phe Ser Pro Gly Ser Val Ser Val Ile Ser Asp
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 Ser Leu Leu Thr Leu Pro Ala Ile Ile Ser Ile Ala Ala Gly Gly Ser
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 ctc ctt ctt atc atc gtc atc att gtc ctc atc gct tac aag cgc aag 4338
 Leu Leu Leu Ile Ile Val Ile Ile Val Leu Ile Ala Tyr Lys Arg Lys
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 Ser Arg Glu Asn Asp Leu Thr Leu Lys Arg Leu Gln Met Gln Met Asp
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 Gly Gln Gln His Val Glu Lys Ala Leu Lys Leu Phe Ala Gln Leu Ile
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 Glu Pro Leu Phe Met Leu Tyr Cys Ala Ile Lys Gln Gln Met Glu Lys
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 Gly Pro Ile Asp Ala Ile Thr Gly Glu Ala Arg Tyr Ser Leu Ser Glu

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Asp Lys Leu Ile Arg Gln Gln Ile Glu Tyr Lys Thr Leu Ile Leu Asn			
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Cys Val Asn Pro Asp Asn Glu Asn Ser Pro Glu Ile Pro Val Lys Val			
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cta aac tgt gac acc atc act caa gtc aag gag aag atc ctc gat gcc			5154
Leu Asn Cys Asp Thr Ile Thr Gln Val Lys Glu Lys Ile Leu Asp Ala			
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Val Tyr Lys Asn Val Pro Tyr Ser Gln Arg Pro Arg Ala Val Asp Met			
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Asp Leu Glu Trp Arg Gln Gly Arg Ile Ala Arg Val Val Leu Gln Asp			
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Glu Asp Ile Thr Thr Lys Ile Glu Gly Asp Trp Lys Arg Leu Asn Thr			
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Leu Met His Tyr Gln Val Ser Asp Arg Ser Val Val Ala Leu Val Pro			
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Lys Gln Thr Ser Ser Tyr Asn Ile Pro Ala Ser Ala Ser Ile Ser Arg			
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aca tcc att agc aga tat gac tct tcc ttc agg tac aca ggc agc cca			5442
Thr Ser Ile Ser Arg Tyr Asp Ser Ser Phe Arg Tyr Thr Gly Ser Pro			
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 1770 1775 1780

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 1785 1790 1795
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 1800 1805 1810
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 Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu Ala Glu Gln Ser Arg Leu
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 His Ala Thr Glu Phe Asn Met Leu Ser Ala Leu Asn Glu Ile Tyr Ser
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 Tyr Val Ser Lys Tyr Ser Glu Glu Leu Ile Gly Ala Leu Glu Gln Asp
 1850 1855 1860
 gaa cag gcc cga cgg caa cga ctg gcc tac aag gtg gag cat ctc atc 6210
 Glu Gln Ala Arg Arg Gln Arg Leu Ala Tyr Lys Val Glu His Leu Ile
 1865 1870 1875
 aac gcc atg tcc ata gag agc tga aaggaagaca tcttggttctt ggaagagaga 6264
 Asn Ala Met Ser Ile Glu Ser
 1880 1885
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<211> 1884

<212> PRT

<213> Mus musculus

<400> 480

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 35 40 45
 Thr Gly Ala Val Tyr Val Gly Ala Ile Asn Arg Val Tyr Lys Leu Thr
 50 55 60
 Gly Asn Leu Thr Ile Gln Val Ala His Lys Thr Gly Pro Glu Glu Asp
 65 70 75 80
 Asn Lys Ala Cys Tyr Pro Pro Leu Ile Val Gln Pro Cys Ser Glu Val
 85 90 95
 Leu Thr Leu Thr Asn Asn Val Asn Lys Leu Leu Ile Ile Asp Tyr Ser
 100 105 110
 Glu Asn Arg Leu Leu Ala Cys Gly Ser Leu Tyr Gln Gly Val Cys Lys
 115 120 125
 Leu Leu Arg Leu Asp Asp Leu Phe Ile Leu Val Glu Pro Ser His Lys
 130 135 140
 Lys Glu His Tyr Leu Ser Ser Val Asn Lys Thr Gly Thr Met Tyr Gly
 145 150 155 160
 Val Ile Val Arg Ser Glu Gly Glu Asp Gly Lys Leu Phe Ile Gly Thr
 165 170 175

Ala Val Asp Gly Lys Gln Asp Tyr Phe Pro Thr Leu Ser Ser Arg Lys
 180 185 190
 Leu Pro Arg Asp Pro Glu Ser Ser Ala Met Leu Asp Tyr Glu Leu His
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 Ser Asp Phe Val Ser Ser Leu Ile Lys Ile Pro Ser Asp Thr Leu Ala
 210 215 220
 Leu Val Ser His Phe Asp Ile Phe Tyr Ile Tyr Gly Phe Ala Ser Gly
 225 230 235 240
 Gly Phe Val Tyr Phe Leu Thr Val Gln Pro Glu Thr Pro Asp Gly Met
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 Ala Ile Asn Ser Ala Gly Asp Leu Phe Tyr Thr Ser Arg Ile Val Arg
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 Gly Cys Thr Arg Ala Gly Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr
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 Leu Ala Lys Pro Gly Glu Ala Leu Ala Gln Ala Phe Asn Ile Ser Ser
 305 310 315 320
 Asp Glu Asp Val Leu Phe Ala Ile Phe Ser Lys Gly Gln Lys Gln Tyr
 325 330 335
 His His Pro Pro Asp Asp Ser Ala Leu Cys Ala Phe Pro Ile Arg Ala
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 Ile Asn Leu Gln Ile Lys Glu Arg Leu Gln Ser Cys Tyr His Gly Glu
 355 360 365
 Gly Asn Leu Glu Leu Asn Trp Leu Leu Gly Lys Asp Val Gln Cys Thr
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 Lys Ala Pro Val Pro Ile Asp Asp Asn Phe Cys Gly Leu Asp Ile Asn
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 Gln Pro Leu Gly Gly Ser Thr Pro Val Glu Gly Leu Thr Leu Tyr Thr

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420	425	430
Tyr Ser Val Val Phe Val Gly Thr Lys Ser Gly Lys Leu Lys Lys Ile		
435	440	445
Arg Ala Asp Gly Pro Pro His Gly Gly Val Gln Tyr Glu Met Val Ser		
450	455	460
Val Phe Lys Asp Gly Ser Pro Ile Leu Arg Asp Met Ala Phe Ser Ile		
465	470	475
Asn Gln Leu Tyr Leu Tyr Val Met Ser Glu Arg Gln Val Thr Arg Val		480
485	490	495
Pro Val Glu Ser Cys Glu Gln Tyr Thr Thr Cys Gly Glu Cys Leu Ser		
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Ser Gly Asp Pro His Cys Gly Trp Cys Ala Leu His Asn Met Cys Ser		
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Arg Arg Asp Lys Cys Gln Arg Ala Trp Glu Ala Asn Arg Phe Ala Ala		
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Lys Asp Val Pro Val Ile Pro Leu Asp Gln Asp Trp Phe Gly Leu Glu		
610	615	620
Leu Gln Leu Arg Ser Lys Glu Thr Gly Lys Ile Phe Val Ser Thr Glu		
625	630	635
		640

Phe Lys Phe Tyr Asn Cys Ser Ala His Gln Leu Cys Leu Ser Cys Val
 645 650 655
 Asn Ser Ala Phe Arg Cys His Trp Cys Lys Tyr Arg Asn Leu Cys Thr
 660 665 670
 His Asp Pro Thr Thr Cys Ser Phe Gln Glu Gly Arg Ile Asn Val Ser
 675 680 685
 Glu Asp Cys Pro Gln Leu Val Pro Thr Glu Glu Ile Leu Ile Pro Val
 690 695 700
 Gly Glu Val Lys Pro Ile Thr Leu Lys Ala Arg Asn Leu Pro Gln Pro
 705 710 715 720
 Gln Ser Gly Gln Arg Gly Tyr Glu Cys Val Leu Ser Ile Gln Gly Ala
 725 730 735
 Val His Arg Val Pro Ala Leu Arg Phe Asn Ser Ser Ser Val Gln Cys
 740 745 750
 Gln Asn Ser Ser Tyr Gln Tyr Asp Gly Met Asp Ile Ser Asn Leu Ala
 755 760 765
 Val Asp Phe Ala Val Val Trp Asn Gly Asn Phe Ile Ile Asp Asn Pro
 770 775 780
 Gln Asp Leu Lys Val His Leu Tyr Lys Cys Ala Ala Gln Arg Glu Ser
 785 790 795 800
 Cys Gly Leu Cys Leu Lys Ala Asp His Lys Phe Glu Cys Gly Trp Cys
 805 810 815
 Ser Gly Glu Arg Arg Cys Thr Leu His Gln His Cys Pro Ser Thr Ser
 820 825 830
 Ser Pro Trp Leu Asp Trp Ser Ser His Asn Val Lys Cys Ser Asn Pro
 835 840 845
 Gln Ile Thr Glu Ile Leu Thr Val Ser Gly Pro Pro Glu Gly Gly Thr
 850 855 860
 Arg Val Thr Ile His Gly Val Asn Leu Gly Leu Asp Phe Ser Glu Ile

865 870 875 880
 Ala His His Val Gln Val Ala Gly Val Pro Cys Thr Pro Ile Pro Gly
 885 890 895
 Glu Tyr Ile Ile Ala Glu Gln Ile Val Cys Glu Met Gly His Ala Val
 900 905 910
 Ile Gly Thr Thr Ser Gly Pro Val Arg Leu Cys Ile Gly Glu Cys Lys
 915 920 925
 Pro Glu Phe Met Thr Lys Ser His Gln Gln Tyr Thr Phe Val Asn Pro
 930 935 940
 Ser Val Leu Ser Leu Ser Pro Ile Arg Gly Pro Glu Ser Gly Gly Thr
 945 950 955 960
 Met Val Thr Ile Thr Gly His Tyr Leu Gly Ala Gly Ser Ser Val Ala
 965 970 975
 Val Tyr Leu Gly Asn Gln Thr Cys Glu Phe Tyr Gly Arg Ser Met Asn
 980 985 990
 Glu Ile Val Cys Val Ser Pro Pro Ser Ser Asn Gly Leu Gly Pro Val
 995 1000 1005
 Pro Val Ser Val Ser Val Asp Arg Ala Arg Val Asp Ser Ser Leu Gln
 1010 1015 1020
 Phe Glu Tyr Ile Asp Asp Pro Arg Val Gln Arg Ile Glu Pro Glu Trp
 025 1030 1035 1040
 Ser Ile Thr Ser Gly His Thr Pro Leu Thr Ile Thr Gly Phe Asn Leu
 1045 1050 1055
 Asp Val Ile Gln Glu Pro Arg Val Arg Val Lys Phe Asn Gly Lys Glu
 1060 1065 1070
 Ser Val Asn Val Cys Thr Val Val Asn Thr Thr Thr Leu Thr Cys Leu
 1075 1080 1085
 Ala Pro Ser Leu Thr Ser Asp Tyr Arg Pro Gly Leu Asp Thr Val Glu
 1090 1095 1100

Arg Pro Asp Glu Phe Gly Phe Leu Phe Asn Asn Val Gln Ser Leu Leu
 105 1110 1115 1120
 Ile Tyr Asn Asp Thr Lys Phe Ile Tyr Tyr Pro Asn Pro Thr Phe Glu
 1125 1130 1135
 Leu Leu Ser Pro Thr Gly Ile Leu Asp Gln Lys Pro Gly Ser Pro Ile
 1140 1145 1150
 Ile Leu Lys Gly Lys Asn Leu Cys Pro Pro Ala Ser Gly Gly Ala Lys
 1155 1160 1165
 Leu Asn Tyr Thr Val Met Ile Gly Glu Thr Pro Cys Thr Val Thr Val
 1170 1175 1180
 Ser Glu Thr Gln Leu Leu Cys Glu Pro Pro Asn Leu Thr Gly Gln His
 185 1190 1195 1200
 Lys Val Met Val His Val Gly Gly Met Val Phe Ser Pro Gly Ser Val
 1205 1210 1215
 Ser Val Ile Ser Asp Ser Leu Leu Thr Leu Pro Ala Ile Ile Ser Ile
 1220 1225 1230
 Ala Ala Gly Gly Ser Leu Leu Leu Ile Ile Val Ile Ile Val Leu Ile
 1235 1240 1245
 Ala Tyr Lys Arg Lys Ser Arg Glu Asn Asp Leu Thr Leu Lys Arg Leu
 1250 1255 1260
 Gln Met Gln Met Asp Asn Leu Glu Ser Arg Val Ala Leu Glu Cys Lys
 265 1270 1275 1280
 Glu Ala Phe Ala Glu Leu Gln Thr Asp Ile Asn Glu Leu Thr Ser Asp
 1285 1290 1295
 Leu Asp Arg Ser Gly Ile Pro Tyr Leu Asp Tyr Arg Thr Tyr Ala Met
 1300 1305 1310
 Arg Val Leu Phe Pro Gly Ile Glu Asp His Pro Val Leu Arg Glu Leu
 1315 1320 1325
 Glu Val Gln Gly Asn Gly Gln Gln His Val Glu Lys Ala Leu Lys Leu

1330	1335	1340
Phe Ala Gln Leu Ile Asn Asn Lys Val Phe Leu Leu Thr Phe Ile Arg		
345	1350	1355 1360
Thr Leu Glu Leu Gln Arg Ser Phe Ser Met Arg Asp Arg Gly Asn Val		
1365	1370	1375
Ala Ser Leu Ile Met Thr Gly Leu Gln Gly Arg Leu Glu Tyr Ala Thr		
1380	1385	1390
Asp Val Leu Lys Gln Leu Leu Ser Asp Leu Ile Asp Lys Asn Leu Glu		
1395	1400	1405
Asn Lys Asn His Pro Lys Leu Leu Leu Arg Arg Thr Glu Ser Val Ala		
1410	1415	1420
Glu Lys Met Leu Thr Asn Trp Phe Ala Phe Leu Leu His Lys Phe Leu		
425	1430	1435 1440
Lys Glu Cys Ala Gly Glu Pro Leu Phe Met Leu Tyr Cys Ala Ile Lys		
1445	1450	1455
Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly Glu Ala Arg		
1460	1465	1470
Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile Glu Tyr Lys		
1475	1480	1485
Thr Leu Ile Leu Asn Cys Val Asn Pro Asp Asn Glu Asn Ser Pro Glu		
1490	1495	1500
Ile Pro Val Lys Val Leu Asn Cys Asp Thr Ile Thr Gln Val Lys Glu		
505	1510	1515 1520
Lys Ile Leu Asp Ala Val Tyr Lys Asn Val Pro Tyr Ser Gln Arg Pro		
1525	1530	1535
Arg Ala Val Asp Met Asp Leu Glu Trp Arg Gln Gly Arg Ile Ala Arg		
1540	1545	1550
Val Val Leu Gln Asp Glu Asp Ile Thr Thr Lys Ile Glu Gly Asp Trp		
1555	1560	1565

Lys Arg Leu Asn Thr Leu Met His Tyr Gln Val Ser Asp Arg Ser Val
 1570 1575 1580
 Val Ala Leu Val Pro Lys Gln Thr Ser Ser Tyr Asn Ile Pro Ala Ser
 585 1590 1595 1600
 Ala Ser Ile Ser Arg Thr Ser Ile Ser Arg Tyr Asp Ser Ser Phe Arg
 1605 1610 1615
 Tyr Thr Gly Ser Pro Asp Ser Leu Arg Ser Arg Val Pro Met Ile Thr
 1620 1625 1630
 Pro Asp Leu Glu Ser Gly Val Lys Val Trp His Leu Val Lys Asn His
 1635 1640 1645
 Asp His Gly Asp Gln Lys Glu Gly Asp Arg Gly Ser Lys Met Val Ser
 1650 1655 1660
 Glu Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr Leu Gln Lys
 665 1670 1675 1680
 Phe Val Asp Asp Leu Phe Glu Thr Leu Phe Ser Thr Val His Arg Gly
 1685 1690 1695
 Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe Leu Asp Glu
 1700 1705 1710
 Gln Ala Asp Arg His Ser Ile His Asp Thr Asp Val Arg His Thr Trp
 1715 1720 1725
 Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val Ile Lys Asn
 1730 1735 1740
 Pro Gln Phe Val Phe Asp Ile His Lys Gly Ser Ile Thr Asp Ala Cys
 745 1750 1755 1760
 Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser Cys Ser Thr Ser Glu
 1765 1770 1775
 His Arg Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu Tyr Ala Lys
 1780 1785 1790
 Asp Ile Pro Ser Tyr Lys Asn Trp Val Glu Arg Tyr Tyr Ala Asp Ile

1795	1800	1805
Ala Lys Leu Pro Ala Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu Ala		
1810	1815	1820
Glu Gln Ser Arg Leu His Ala Thr Glu Phe Asn Met Leu Ser Ala Leu		
825	1830	1835
Asn Glu Ile Tyr Ser Tyr Val Ser Lys Tyr Ser Glu Glu Leu Ile Gly		
1845	1850	1855
Ala Leu Glu Gln Asp Glu Gln Ala Arg Arg Gln Arg Leu Ala Tyr Lys		
1860	1865	1870
Val Glu His Leu Ile Asn Ala Met Ser Ile Glu Ser		
1875	1880	

<210> 481

<211> 1191

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (104).. (889)

<400> 481

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Met Asp Trp Gly

1

acc ctg cac acc gtc atc ggt ggc gtg aac aag cac tct acc agc ata 163

Thr Leu His Thr Val Ile Gly Gly Val Asn Lys His Ser Thr Ser Ile

5

10

15

20

ggg aag gtg tgg atc acg gtc atc ttt att ttc cga gtc atg atc cta 211
 Gly Lys Val Trp Ile Thr Val Ile Phe Ile Phe Arg Val Met Ile Leu
 25 30 35
 gtg gtg gct gcc cag gaa gtg tgg ggt gat gag cag gag gac ttt gtc 259
 Val Val Ala Ala Gln Glu Val Trp Gly Asp Glu Gln Glu Asp Phe Val
 40 45 50
 tgc aac act ctg cag cca ggg tgc aag aac gtc tgc tat gac cat ttc 307
 Cys Asn Thr Leu Gln Pro Gly Cys Lys Asn Val Cys Tyr Asp His Phe
 55 60 65
 ttc ccg gtg tct cac atc cgg ctc tgg gcc ctg cag ctg atc ttt gtg 355
 Phe Pro Val Ser His Ile Arg Leu Trp Ala Leu Gln Leu Ile Phe Val
 70 75 80
 tct acc cca gcc ctg ttg gtg gcc atg cac gtg gcc tac tac aga cat 403
 Ser Thr Pro Ala Leu Leu Val Ala Met His Val Ala Tyr Tyr Arg His
 85 90 95 100
 gaa act gcc cga aag ttt ata cgt ggg gag aag aga aac gag ttt aaa 451
 Glu Thr Ala Arg Lys Phe Ile Arg Gly Glu Lys Arg Asn Glu Phe Lys
 105 110 115
 gac ctg gag gac atc aaa cgg cag aag gtg cgc att gag ggc tcc ctg 499
 Asp Leu Glu Asp Ile Lys Arg Gln Lys Val Arg Ile Glu Gly Ser Leu
 120 125 130
 tgg tgg acg tac acc agc agc att ttc ttc cgc atc atc ttc gaa gcc 547
 Trp Trp Thr Tyr Thr Ser Ser Ile Phe Phe Arg Ile Ile Phe Glu Ala
 135 140 145
 gcc ttc atg tat gtg ttc tac ttc ctc tac aat ggg tac cac cta ccc 595
 Ala Phe Met Tyr Val Phe Tyr Phe Leu Tyr Asn Gly Tyr His Leu Pro
 150 155 160
 tgg gta ctg aaa tgt ggc att gac ccc tgc ccc aat ctc gtg gac tgc 643
 Trp Val Leu Lys Cys Gly Ile Asp Pro Cys Pro Asn Leu Val Asp Cys

165 170 175 180
 ttc att tgc agg cca act gag aaa acg gtg ttc act gtt ttt atg att 691
 Phe Ile Ser Arg Pro Thr Glu Lys Thr Val Phe Thr Val Phe Met Ile
 185 190 195
 tcc gca tcc gtg att tgc atg ctg ctc aat gtg gcc gag ttg tgt tac 739
 Ser Ala Ser Val Ile Cys Met Leu Leu Asn Val Ala Glu Leu Cys Tyr
 200 205 210
 ctg ctg ctt aaa ttg tgc ttt agg aga tcc aaa aga aca cag gcg cag 787
 Leu Leu Leu Lys Leu Cys Phe Arg Arg Ser Lys Arg Thr Gln Ala Gln
 215 220 225
 aga aac cac ccc aac cat gcc ctg aaa gag agc aag cag aat gaa atg 835
 Arg Asn His Pro Asn His Ala Leu Lys Glu Ser Lys Gln Asn Glu Met
 230 235 240
 aat gag ctg atc tca gat agt ggc cag aat gca atc aca agt ttc cca 883
 Asn Glu Leu Ile Ser Asp Ser Gly Gln Asn Ala Ile Thr Ser Phe Pro
 245 250 255 260
 agt taa gcacttcaag gtcaagtgtg ggtgagccct tctgagcatg taccctcttt 939
 Ser
 gtagacaaca ttgatctgac aactcctcct ctaggtcaag agtttgttcta taagtgactc 999
 atagaaagtg gatacttgag ttcgattatt gtagaacacc tgagctgttc atacacaata 1059
 taagtcaaaa ttgtgggtcta tctctgaaaa ccaagccctc gtgacaactg ggccttggag 1119
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<210> 482

<211> 261

<212> PRT

<213> Mus musculus

<400> 482

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 Val Met Ile Leu Val Val Ala Ala Gln Glu Val Trp Gly Asp Glu Gln
 35 40 45
 Glu Asp Phe Val Cys Asn Thr Leu Gln Pro Gly Cys Lys Asn Val Cys
 50 55 60
 Tyr Asp His Phe Phe Pro Val Ser His Ile Arg Leu Trp Ala Leu Gln
 65 70 75 80
 Leu Ile Phe Val Ser Thr Pro Ala Leu Leu Val Ala Met His Val Ala
 85 90 95
 Tyr Tyr Arg His Glu Thr Ala Arg Lys Phe Ile Arg Gly Glu Lys Arg
 100 105 110
 Asn Glu Phe Lys Asp Leu Glu Asp Ile Lys Arg Gln Lys Val Arg Ile
 115 120 125
 Glu Gly Ser Leu Trp Trp Thr Tyr Thr Ser Ser Ile Phe Phe Arg Ile
 130 135 140
 Ile Phe Glu Ala Ala Phe Met Tyr Val Phe Tyr Phe Leu Tyr Asn Gly
 145 150 155 160
 Tyr His Leu Pro Trp Val Leu Lys Cys Gly Ile Asp Pro Cys Pro Asn
 165 170 175
 Leu Val Asp Cys Phe Ile Ser Arg Pro Thr Glu Lys Thr Val Phe Thr
 180 185 190
 Val Phe Met Ile Ser Ala Ser Val Ile Cys Met Leu Leu Asn Val Ala
 195 200 205
 Glu Leu Cys Tyr Leu Leu Leu Lys Leu Cys Phe Arg Arg Ser Lys Arg
 210 215 220

His Gln Phe Pro Asp Tyr His Asp Pro Thr Ile Glu Asp Ala Tyr Lys
 45 50 55
 acc cag gtg agg att gat aat gag cct gct tac tta gac atc ttg gac 365
 Thr Gln Val Arg Ile Asp Asn Glu Pro Ala Tyr Leu Asp Ile Leu Asp
 60 65 70
 act gct ggt cag gca gag ttc acg gcc atg cgg gag cag tac atg cgt 413
 Thr Ala Gly Gln Ala Glu Phe Thr Ala Met Arg Glu Gln Tyr Met Arg
 75 80 85 90
 ggg gga gag ggc ttc atc atc tgc tat tct gtc act gac cgc cag tca 461
 Gly Gly Glu Gly Phe Ile Ile Cys Tyr Ser Val Thr Asp Arg Gln Ser
 95 100 105
 ttc cag gag gct gcc aag ttc aag gag ctt att ttc cag gtc cgt cac 509
 Phe Gln Glu Ala Ala Lys Phe Lys Glu Leu Ile Phe Gln Val Arg His
 110 115 120
 acc tat gaa att ccc ctt gtg cta gtg ggt aac aaa att gac ttg gag 557
 Thr Tyr Glu Ile Pro Leu Val Leu Val Gly Asn Lys Ile Asp Leu Glu
 125 130 135
 cag ttc cgt cag gta tct aca gaa gaa ggc atg aat ctt gct cga gac 605
 Gln Phe Arg Gln Val Ser Thr Glu Glu Gly Met Asn Leu Ala Arg Asp
 140 145 150
 tac aac tgt gcc ttc ttt gag aca tct gca gcc ctg cga ttc ggt atc 653
 Tyr Asn Cys Ala Phe Phe Glu Thr Ser Ala Ala Leu Arg Phe Gly Ile
 155 160 165 170
 gat gat gct ttt caa ggc tta gtg aga gaa att cgc agg aag gaa tcc 701
 Asp Asp Ala Phe Gln Gly Leu Val Arg Glu Ile Arg Arg Lys Glu Ser
 175 180 185
 atg ctg tcc ttg gtg gaa agg aaa ttg aag agg aag gac agc ctg tgg 749
 Met Leu Ser Leu Val Glu Arg Lys Leu Lys Arg Lys Asp Ser Leu Trp
 190 195 200

aag aag ata aaa gcc tcc ctg aag aag aag aga gaa aac atg ttg tga 797

Lys Lys Ile Lys Ala Ser Leu Lys Lys Lys Arg Glu Asn Met Leu

205

210

215

ggctttgctt ccgcatacctt cctgtctctc ctgtgggtt ttatcaacca gacaattgtt 857
 catactcca tctcactctc tctttctctc tccatctctt tttctttccc tttccccctc 917
 tcttaacaca cacacacaca caatctacct gcaggcagaa attagacttc tataactgtg 977
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 tccttgtctt ctcttaagtg gaagagctt ggtatttctt cttagtcct ctatagatga 1337
 acattagaga aattattgat aataggaact gagtttgtgt tattaaaata ctaaaattac 1397
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 cctgcatagt agccatctgt ctgcagcgt atggcctcta cataactaagt gttctcttca 1637
 tattattaaa tttcctctct catittccaa gaagcattac aagaagctga catcagaaat 1697
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 ttaaa 1762

<210> 484

<211> 217

<212> PRT

<213> Mus musculus

<400> 484

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Gly Ser Arg Glu Tyr Lys Val Val Met Leu Gly Ala Gly Gly Val Gly
 20 25 30
 Lys Ser Ala Val Thr Met Gln Phe Ile Ser His Gln Phe Pro Asp Tyr
 35 40 45
 His Asp Pro Thr Ile Glu Asp Ala Tyr Lys Thr Gln Val Arg Ile Asp
 50 55 60
 Asn Glu Pro Ala Tyr Leu Asp Ile Leu Asp Thr Ala Gly Gln Ala Glu
 65 70 75 80
 Phe Thr Ala Met Arg Glu Gln Tyr Met Arg Gly Gly Glu Gly Phe Ile
 85 90 95
 Ile Cys Tyr Ser Val Thr Asp Arg Gln Ser Phe Gln Glu Ala Ala Lys
 100 105 110
 Phe Lys Glu Leu Ile Phe Gln Val Arg His Thr Tyr Glu Ile Pro Leu
 115 120 125
 Val Leu Val Gly Asn Lys Ile Asp Leu Glu Gln Phe Arg Gln Val Ser
 130 135 140
 Thr Glu Glu Gly Met Asn Leu Ala Arg Asp Tyr Asn Cys Ala Phe Phe
 145 150 155 160
 Glu Thr Ser Ala Ala Leu Arg Phe Gly Ile Asp Asp Ala Phe Gln Gly
 165 170 175
 Leu Val Arg Glu Ile Arg Arg Lys Glu Ser Met Leu Ser Leu Val Glu
 180 185 190
 Arg Lys Leu Lys Arg Lys Asp Ser Leu Trp Lys Lys Ile Lys Ala Ser
 195 200 205
 Leu Lys Lys Lys Arg Glu Asn Met Leu
 210 215

<210> 485

<211> 959

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (56).. (478):

<400> 485

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Lys Glu Arg Glu Glu Met Trp Gln Lys Ile Glu Glu Leu Ala Arg Leu
           5                10                15
aat ccc cag tac cct atg ttt cgg ctc ctc cgc cac tgc ccc tgt gta  154
Asn Pro Gln Tyr Pro Met Phe Arg Leu Leu Arg His Cys Pro Cys Val
      20                25                30
ctc cat gga gac aga gac gcc cac agc aga gga cat tca gct cct gaa  202
Leu His Gly Asp Arg Asp Ala His Ser Arg Gly His Ser Ala Pro Glu
      35                40                45
gag gac ggt gga gac aga ggc cgt gca gat gct gaa gga cat caa gaa  250
Glu Asp Gly Gly Asp Arg Gly Arg Ala Asp Ala Glu Gly His Gln Glu
      50                55                60                65
gga caa agt gct gct ccg gag gaa gtc aga gct gcc aca gga cgt gta  298
Gly Gln Ser Ala Ala Pro Glu Glu Val Arg Ala Ala Thr Gly Arg Val
           70                75                80
cac cat caa ggc act aga ggg cac aag cgg gca gaa gag ttc ctg act  346
His His Gln Gly Thr Arg Gly His Lys Arg Ala Glu Glu Phe Leu Thr
           85                90                95

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gcc agc agg agg ccc tct gac ccc ctc acc ttc cct tcc cac agg att 394
 Ala Ser Arg Arg Pro Ser Asp Pro Leu Thr Phe Pro Ser His Arg Ile
 100 105 110
 cca gcc cac tca gcc tgg agg gaa cca atc ccc agc agc aca aat agg 442
 Pro Ala His Ser Ala Trp Arg Glu Pro Ile Pro Ser Ser Thr Asn Arg
 115 120 125
 ccc cta gac cca gct tta tgc agg cgg ggg tgg tag tgtgtttctt 488
 Pro Leu Asp Pro Ala Leu Cys Arg Arg Gly Trp
 130 135 140
 tgtatcctat acctaacc aa gacaacacag aggacaaaca agttacggac actagatgac 548
 tagtgggccc ggtgggagaa agaaccatct gccttgcct ctctggcaag cagcagtcct 608
 gggatcacac atttgaagg gaccacctg tggtgactg ctttccctg tgctcttgg 668
 tcccagagct ataaagaagg aggcaaggca gtgctccaag catggctccc tgctgtgcct 728
 gtttatttcc tggtttctgc tgacgtggg ctgggcgggt ctcacctgta ccctctaggc 788
 gctcagaaac aaaagcctgg ggagggtgg accaggattc aggagcacag gcgtgtggct 848
 tctggctgtg tacacagggt gcittattct ccacagagtg atacatgcta aggtgggctg 908
 gcttggccga tgtccccata tgtacagaac tgaataaagt gggctctctga g 959

<210> 486

<211> 140

<212> PRT

<213> Mus musculus

<400> 486

Met Lys Glu Arg Glu Glu Met Trp Gln Lys Ile Glu Glu Leu Ala Arg
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 Leu Asn Pro Gln Tyr Pro Met Phe Arg Leu Leu Arg His Cys Pro Cys
 20 25 30
 Val Leu His Gly Asp Arg Asp Ala His Ser Arg Gly His Ser Ala Pro

35	40	45
Glu Glu Asp Gly Gly Asp Arg Gly Arg Ala Asp Ala Glu Gly His Gln		
50	55	60
Glu Gly Gln Ser Ala Ala Pro Glu Glu Val Arg Ala Ala Thr Gly Arg		
65	70	75
Val His His Gln Gly Thr Arg Gly His Lys Arg Ala Glu Glu Phe Leu		80
	85	90
Thr Ala Ser Arg Arg Pro Ser Asp Pro Leu Thr Phe Pro Ser His Arg		95
	100	105
Ile Pro Ala His Ser Ala Trp Arg Glu Pro Ile Pro Ser Ser Thr Asn		110
	115	120
Arg Pro Leu Asp Pro Ala Leu Cys Arg Arg Gly Trp		125
	130	135
		140

<210> 487

<211> 4010

<212> DNA

<213> Mus musculus.

<220>

<221> CDS

<222> (192).. (3266)

<400> 487

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 ggccgagctg agtccccgac ccccgaggaga gcgctggggc gtggcgccgg ctccgcggcc 180
 gcctagccga c atg tcg gcg gcc aag gaa aac ccg tgc agg aaa ttt cag 230
 Met Ser Ala Ala Lys Glu Asn Pro Cys Arg Lys Phe Gln

1	5	10	
gcc aac atc ttc aac aag agc aag tgt cag aac tgc ttc aag ccc cgc	278		
Ala Asn Ile Phe Asn Lys Ser Lys Cys Gln Asn Cys Phe Lys Pro Arg			
15	20	25	
gag tcg cat ctg ctc aac gac gag gac ctg acg cag gca aaa ccc att	326		
Glu Ser His Leu Leu Asn Asp Glu Asp Leu Thr Gln Ala Lys Pro Ile			
30	35	40	45
tat ggt ggc tgg ctg ctc ctg gct cca gat ggc act gac ttt gac aac	374		
Tyr Gly Gly Trp Leu Leu Leu Ala Pro Asp Gly Thr Asp Phe Asp Asn			
50	55	60	
cca gtg cac cgg tca cgg aaa tgg cag cga cga ttc ttc atc ctt tat	422		
Pro Val His Arg Ser Arg Lys Trp Gln Arg Arg Phe Phe Ile Leu Tyr			
65	70	75	
gag cat ggc ctc ttg cga tat gcc ctg gat gag atg ccc acc acc ctc	470		
Glu His Gly Leu Leu Arg Tyr Ala Leu Asp Glu Met Pro Thr Thr Leu			
80	85	90	
cct cag ggc acc atc aac atg aac cag tgc aca gat gtg gtg gat ggg	518		
Pro Gln Gly Thr Ile Asn Met Asn Gln Cys Thr Asp Val Val Asp Gly			
95	100	105	
gag gcc cgc aca ggg cag aag ttc tcc ctc tgc atc ctg aca cct gac	566		
Glu Ala Arg Thr Gly Gln Lys Phe Ser Leu Cys Ile Leu Thr Pro Asp			
110	115	120	125
aag gaa cat ttt atc agg gca gaa acc aag gag atc atc agt ggg tgg	614		
Lys Glu His Phe Ile Arg Ala Glu Thr Lys Glu Ile Ile Ser Gly Trp			
130	135	140	
tta gag atg ctc atg gtg tat cct cga acc aac aag cag aac cag aag	662		
Leu Glu Met Leu Met Val Tyr Pro Arg Thr Asn Lys Gln Asn Gln Lys			
145	150	155	
aag aaa cgg aaa gta gag cca cct acc cca cag gag cct ggg cct gct	710		

Lys Lys Arg Lys Val Glu Pro Pro Thr Pro Gln Glu Pro Gly Pro Ala
 160 165 170
 aag atg gct gtc act agc agt agt ggc ggc acg agt ggt agc agc agc 758
 Lys Met Ala Val Thr Ser Ser Ser Gly Gly Thr Ser Gly Ser Ser Ser
 175 180 185
 agc att ccc agt gct gag aaa gtt ccc acc acc aaa tcc aca ctc tgg 806
 Ser Ile Pro Ser Ala Glu Lys Val Pro Thr Thr Lys Ser Thr Leu Trp
 190 195 200 205
 cag gaa gaa atg aga gcc aaa gac caa cct gat ggg acc agc ctg agt 854
 Gln Glu Glu Met Arg Ala Lys Asp Gln Pro Asp Gly Thr Ser Leu Ser
 210 215 220
 cca gct caa agt ccc agc caa agc cag cct cct gct gct tgc acc cca 902
 Pro Ala Gln Ser Pro Ser Gln Ser Gln Pro Pro Ala Ala Cys Thr Pro
 225 230 235
 cgg gaa cca gga cta gaa agc aaa gaa gat gaa agc acc ata agt ggg 950
 Arg Glu Pro Gly Leu Glu Ser Lys Glu Asp Glu Ser Thr Ile Ser Gly
 240 245 250
 gac cgt gtg gat ggt ggt cgg aaa gta cgg gta gag agc ggc tac ttc 998
 Asp Arg Val Asp Gly Gly Arg Lys Val Arg Val Glu Ser Gly Tyr Phe
 255 260 265
 tcc ctg gag aag gcc aag cag gac ctg agg gct gag gag cag ctg ccc 1046
 Ser Leu Glu Lys Ala Lys Gln Asp Leu Arg Ala Glu Glu Gln Leu Pro
 270 275 280 285
 cca cta ctc tcc cca ccc agc ccc agc acc cca cac agc agg agg tcc 1094
 Pro Leu Leu Ser Pro Pro Ser Pro Ser Thr Pro His Ser Arg Arg Ser
 290 295 300
 cag gta att gag aaa ttt gag gcc ttg gac att gaa aaa gca gag cac 1142
 Gln Val Ile Glu Lys Phe Glu Ala Leu Asp Ile Glu Lys Ala Glu His
 305 310 315

atg gaa acc aac atg ctg att ctg acc act cca tca agt gac act cgt 1190
 Met Glu Thr Asn Met Leu Ile Leu Thr Thr Pro Ser Ser Asp Thr Arg
 320 325 330
 cag ggc cgc agt gag aga cgg gcc atc cct aga aag cgg gac ttt gcc 1238
 Gln Gly Arg Ser Glu Arg Arg Ala Ile Pro Arg Lys Arg Asp Phe Ala
 335 340 345
 agc gaa gcc ccc aca gct cct ctc tca gat gct tgt ccc ctg tct cca 1286
 Ser Glu Ala Pro Thr Ala Pro Leu Ser Asp Ala Cys Pro Leu Ser Pro
 350 355 360 365
 cac cga aga gcc aag tca ttg gac agg agg tcc aca gaa tcc tcc atg 1334
 His Arg Arg Ala Lys Ser Leu Asp Arg Arg Ser Thr Glu Ser Ser Met
 370 375 380
 acg cct gac ctg ctg aat ttc aag aaa ggc tgg cta acc aag cag tat 1382
 Thr Pro Asp Leu Leu Asn Phe Lys Lys Gly Trp Leu Thr Lys Gln Tyr
 385 390 395
 gag gat ggc cag tgg aag aaa cac tgg ttt gtc ctg gca gat cag agc 1430
 Glu Asp Gly Gln Trp Lys Lys His Trp Phe Val Leu Ala Asp Gln Ser
 400 405 410
 ctg aga tac tac agg gat tcc gtg gct gag gag gca gct gac cta gat 1478
 Leu Arg Tyr Tyr Arg Asp Ser Val Ala Glu Glu Ala Ala Asp Leu Asp
 415 420 425
 gga gaa att aac ttg tcc act tgc tat gat gtc act gag tat cca gtc 1526
 Gly Glu Ile Asn Leu Ser Thr Cys Tyr Asp Val Thr Glu Tyr Pro Val
 430 435 440 445
 cag aga aac tat ggc ttt cag ata cat acc aag gag ggt gag ttc acc 1574
 Gln Arg Asn Tyr Gly Phe Gln Ile His Thr Lys Glu Gly Glu Phe Thr
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 ctc tca gcc atg aca tct ggc ata cga cgg aac tgg atc cag acc att 1622
 Leu Ser Ala Met Thr Ser Gly Ile Arg Arg Asn Trp Ile Gln Thr Ile

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Met Lys His Val Leu Pro Ala Ser Ala Pro Asp Val Thr Ser Ser Leu			
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cct gag gga aag aat aaa agc aca tct ttt gag acc tgc tca agg tca			1718
Pro Glu Gly Lys Asn Lys Ser Thr Ser Phe Glu Thr Cys Ser Arg Ser			
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act gag aag caa gaa gct gag cca gga gag cca gat cct gaa caa aag			1766
Thr Glu Lys Gln Glu Ala Glu Pro Gly Glu Pro Asp Pro Glu Gln Lys			
510	515	520	525
aag agc cgt gct cga gag cgg agg cgg gag ggt cgc tcc aag acc ttt			1814
Lys Ser Arg Ala Arg Glu Arg Arg Arg Glu Gly Arg Ser Lys Thr Phe			
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Asp Trp Ala Glu Phe Arg Pro Ile Gln Gln Ala Leu Ala Gln Glu Arg			
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gcc agc gct gtt ggg tct tct gat tct ggt gac cct ggg tgt ctt gaa			1910
Ala Ser Ala Val Gly Ser Ser Asp Ser Gly Asp Pro Gly Cys Leu Glu			
560	565	570	
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Ala Glu Pro Gly Glu Leu Glu Arg Glu Arg Ala Arg Arg Arg Glu Glu			
575	580	585	
ccc cgc aag cgc ttt ggg atg ctg gac acc att gat gga cca gga atg			2006
Pro Arg Lys Arg Phe Gly Met Leu Asp Thr Ile Asp Gly Pro Gly Met			
590	595	600	605
gag gac aca gcc cta cgt atg gac atc gac cgg agc cca ggg ctg ctg			2054
Glu Asp Thr Ala Leu Arg Met Asp Ile Asp Arg Ser Pro Gly Leu Leu			
610	615	620	
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Gly Thr Pro Asp Leu Lys Thr Gln Asn Val His Val Glu Ile Glu Gln	
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Arg Trp His Gln Val Glu Thr Thr Pro Leu Arg Glu Glu Lys Gln Val	
640	650
ccc att gcc cct ctg cac cta tcc ttg gag gac aga agt gag cgg ctc	2198
Pro Ile Ala Pro Leu His Leu Ser Leu Glu Asp Arg Ser Glu Arg Leu	
655	665
tcc aca cat gag ctc acc tct ctg cta gag aag gag ctg gag cag agc	2246
Ser Thr His Glu Leu Thr Ser Leu Leu Glu Lys Glu Leu Glu Gln Ser	
670	685
cag aaa gaa gcc tcg gat ctt cta gag cag aac cgg ctt cta cag gac	2294
Gln Lys Glu Ala Ser Asp Leu Leu Glu Gln Asn Arg Leu Leu Gln Asp	
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cag tta agg gtg gcc ctg ggc aga gaa cag agt gcc cgg gag ggc tat	2342
Gln Leu Arg Val Ala Leu Gly Arg Glu Gln Ser Ala Arg Glu Gly Tyr	
705	715
gtg ctg cag gct aca tgt gag cga ggc ttt gcc gcc atg gag gag aca	2390
Val Leu Gln Ala Thr Cys Glu Arg Gly Phe Ala Ala Met Glu Glu Thr	
720	730
cat cag aag aag att gaa gac cta cag agg caa cac cag cgg gag cta	2438
His Gln Lys Lys Ile Glu Asp Leu Gln Arg Gln His Gln Arg Glu Leu	
735	745
gag aag ctg cgg gag gaa aaa gac cgc ctc ctg gct gag gag aca gct	2486
Glu Lys Leu Arg Glu Glu Lys Asp Arg Leu Leu Ala Glu Glu Thr Ala	
750	765
gcc acc ata tca gcc att gaa gcc atg aag aat gct cac cga gag gag	2534
Ala Thr Ile Ser Ala Ile Glu Ala Met Lys Asn Ala His Arg Glu Glu	
770	780

atg gaa cga gag tta gag aag agc cag cgg tct cag atc agc agc atc 2582
 Met Glu Arg Glu Leu Glu Lys Ser Gln Arg Ser Gln Ile Ser Ser Ile
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 aat tca gac ata gaa gcc ctg agg cga cag tac ctg gag gag ctg cag 2630
 Asn Ser Asp Ile Glu Ala Leu Arg Arg Gln Tyr Leu Glu Glu Leu Gln
 800 805 810
 tca gtg cag cgg gag ctg gaa gtc ctt tca gag cag tac tcc caa aag 2678
 Ser Val Gln Arg Glu Leu Glu Val Leu Ser Glu Gln Tyr Ser Gln Lys
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 Cys Leu Glu Asn Ala His Leu Ala Gln Ala Leu Glu Ala Glu Arg Gln
 830 835 840 845
 gcc ctg cgg caa tgc cag cgt gag aac cag gag ctc aac gcc cac aac 2774
 Ala Leu Arg Gln Cys Gln Arg Glu Asn Gln Glu Leu Asn Ala His Asn
 850 855 860
 cag gag ctg aat aac cgc ctg gct gcg gag atc aca cgg ttg cgg aca 2822
 Gln Glu Leu Asn Asn Arg Leu Ala Ala Glu Ile Thr Arg Leu Arg Thr
 865 870 875
 cta ctg act gga gac ggt ggt ggg gag tcc act ggg ttg cct ctc aca 2870
 Leu Leu Thr Gly Asp Gly Gly Gly Glu Ser Thr Gly Leu Pro Leu Thr
 880 885 890
 cag ggc aag gat gcc tat gag tta gag gtc ttg ttg cgg gtc aaa gag 2918
 Gln Gly Lys Asp Ala Tyr Glu Leu Glu Val Leu Leu Arg Val Lys Glu
 895 900 905
 tca gaa atc cag tac ctg aaa cag gag atc agc tcc ctc aag gat gaa 2966
 Ser Glu Ile Gln Tyr Leu Lys Gln Glu Ile Ser Ser Leu Lys Asp Glu
 910 915 920 925
 ctc cag aca gcc ctg cgg gat aag aag tat gct agt gac aag tac aaa 3014
 Leu Gln Thr Ala Leu Arg Asp Lys Lys Tyr Ala Ser Asp Lys Tyr Lys

930 935 940
 gac atc tac act gag ctc agc att gcc aag gcc aag gct gac tgc gac 3062
 Asp Ile Tyr Thr Glu Leu Ser Ile Ala Lys Ala Lys Ala Asp Cys Asp
 945 950 955
 atc agc agg ctg aag gag cag ctg aaa gca gcc aca gag gca ctg ggc 3110
 Ile Ser Arg Leu Lys Glu Gln Leu Lys Ala Ala Thr Glu Ala Leu Gly
 960 965 970
 gag aaa tct cct gaa ggc act act gtg tca gga tat gac ata atg aaa 3158
 Glu Lys Ser Pro Glu Gly Thr Thr Val Ser Gly Tyr Asp Ile Met Lys
 975 980 985
 tct aaa agc aat cct gac ttc ctg aag aaa gac aga tcc tgt gtt acc 3206
 Ser Lys Ser Asn Pro Asp Phe Leu Lys Lys Asp Arg Ser Cys Val Thr
 990 995 1000 1005
 cgg caa ctc aga aac atc agg tcc aag tcc gta att gag cag gtc tca 3254
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 Trp Asp Asn
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ttagaaccat acccagataa tccggcaaat ccttcacaac ctggaaaatg ttgaaagcaa 3966
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<210> 488

<211> 1024

<212> PRT

<213> Mus musculus

<400> 488

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 20 25 30
 Leu Leu Asn Asp Glu Asp Leu Thr Gln Ala Lys Pro Ile Tyr Gly Gly
 35 40 45
 Trp Leu Leu Leu Ala Pro Asp Gly Thr Asp Phe Asp Asn Pro Val His
 50 55 60
 Arg Ser Arg Lys Trp Gln Arg Arg Phe Phe Ile Leu Tyr Glu His Gly
 65 70 75 80
 Leu Leu Arg Tyr Ala Leu Asp Glu Met Pro Thr Thr Leu Pro Gln Gly
 85 90 95
 Thr Ile Asn Met Asn Gln Cys Thr Asp Val Val Asp Gly Glu Ala Arg
 100 105 110
 Thr Gly Gln Lys Phe Ser Leu Cys Ile Leu Thr Pro Asp Lys Glu His
 115 120 125
 Phe Ile Arg Ala Glu Thr Lys Glu Ile Ile Ser Gly Trp Leu Glu Met
 130 135 140
 Leu Met Val Tyr Pro Arg Thr Asn Lys Gln Asn Gln Lys Lys Lys Arg
 145 150 155 160

Lys Val Glu Pro Pro Thr Pro Gln Glu Pro Gly Pro Ala Lys Met Ala
 165 170 175
 Val Thr Ser Ser Ser Gly Gly Thr Ser Gly Ser Ser Ser Ser Ile Pro
 180 185 190
 Ser Ala Glu Lys Val Pro Thr Thr Lys Ser Thr Leu Trp Gln Glu Glu
 195 200 205
 Met Arg Ala Lys Asp Gln Pro Asp Gly Thr Ser Leu Ser Pro Ala Gln
 210 215 220
 Ser Pro Ser Gln Ser Gln Pro Pro Ala Ala Cys Thr Pro Arg Glu Pro
 225 230 235 240
 Gly Leu Glu Ser Lys Glu Asp Glu Ser Thr Ile Ser Gly Asp Arg Val
 245 250 255
 Asp Gly Gly Arg Lys Val Arg Val Glu Ser Gly Tyr Phe Ser Leu Glu
 260 265 270
 Lys Ala Lys Gln Asp Leu Arg Ala Glu Glu Gln Leu Pro Pro Leu Leu
 275 280 285
 Ser Pro Pro Ser Pro Ser Thr Pro His Ser Arg Arg Ser Gln Val Ile
 290 295 300
 Glu Lys Phe Glu Ala Leu Asp Ile Glu Lys Ala Glu His Met Glu Thr
 305 310 315 320
 Asn Met Leu Ile Leu Thr Thr Pro Ser Ser Asp Thr Arg Gln Gly Arg
 325 330 335
 Ser Glu Arg Arg Ala Ile Pro Arg Lys Arg Asp Phe Ala Ser Glu Ala
 340 345 350
 Pro Thr Ala Pro Leu Ser Asp Ala Cys Pro Leu Ser Pro His Arg Arg
 355 360 365
 Ala Lys Ser Leu Asp Arg Arg Ser Thr Glu Ser Ser Met Thr Pro Asp
 370 375 380
 Leu Leu Asn Phe Lys Lys Gly Trp Leu Thr Lys Gln Tyr Glu Asp Gly

385	390	395	400
Gln Trp Lys Lys His Trp Phe Val Leu Ala Asp Gln Ser Leu Arg Tyr			
405	410	415	
Tyr Arg Asp Ser Val Ala Glu Glu Ala Ala Asp Leu Asp Gly Glu Ile			
420	425	430	
Asn Leu Ser Thr Cys Tyr Asp Val Thr Glu Tyr Pro Val Gln Arg Asn			
435	440	445	
Tyr Gly Phe Gln Ile His Thr Lys Glu Gly Glu Phe Thr Leu Ser Ala			
450	455	460	
Met Thr Ser Gly Ile Arg Arg Asn Trp Ile Gln Thr Ile Met Lys His			
465	470	475	480
Val Leu Pro Ala Ser Ala Pro Asp Val Thr Ser Ser Leu Pro Glu Gly			
485	490	495	
Lys Asn Lys Ser Thr Ser Phe Glu Thr Cys Ser Arg Ser Thr Glu Lys			
500	505	510	
Gln Glu Ala Glu Pro Gly Glu Pro Asp Pro Glu Gln Lys Lys Ser Arg			
515	520	525	
Ala Arg Glu Arg Arg Arg Glu Gly Arg Ser Lys Thr Phe Asp Trp Ala			
530	535	540	
Glu Phe Arg Pro Ile Gln Gln Ala Leu Ala Gln Glu Arg Ala Ser Ala			
545	550	555	560
Val Gly Ser Ser Asp Ser Gly Asp Pro Gly Cys Leu Glu Ala Glu Pro			
565	570	575	
Gly Glu Leu Glu Arg Glu Arg Ala Arg Arg Arg Glu Glu Pro Arg Lys			
580	585	590	
Arg Phe Gly Met Leu Asp Thr Ile Asp Gly Pro Gly Met Glu Asp Thr			
595	600	605	
Ala Leu Arg Met Asp Ile Asp Arg Ser Pro Gly Leu Leu Gly Thr Pro			
610	615	620	

Asp Leu Lys Thr Gln Asn Val His Val Glu Ile Glu Gln Arg Trp His
 625 630 635 640
 Gln Val Glu Thr Thr Pro Leu Arg Glu Glu Lys Gln Val Pro Ile Ala
 645 650 655
 Pro Leu His Leu Ser Leu Glu Asp Arg Ser Glu Arg Leu Ser Thr His
 660 665 670
 Glu Leu Thr Ser Leu Leu Glu Lys Glu Leu Glu Gln Ser Gln Lys Glu
 675 680 685
 Ala Ser Asp Leu Leu Glu Gln Asn Arg Leu Leu Gln Asp Gln Leu Arg
 690 695 700
 Val Ala Leu Gly Arg Glu Gln Ser Ala Arg Glu Gly Tyr Val Leu Gln
 705 710 715 720
 Ala Thr Cys Glu Arg Gly Phe Ala Ala Met Glu Glu Thr His Gln Lys
 725 730 735
 Lys Ile Glu Asp Leu Gln Arg Gln His Gln Arg Glu Leu Glu Lys Leu
 740 745 750
 Arg Glu Glu Lys Asp Arg Leu Leu Ala Glu Glu Thr Ala Ala Thr Ile
 755 760 765
 Ser Ala Ile Glu Ala Met Lys Asn Ala His Arg Glu Glu Met Glu Arg
 770 775 780
 Glu Leu Glu Lys Ser Gln Arg Ser Gln Ile Ser Ser Ile Asn Ser Asp
 785 790 795 800
 Ile Glu Ala Leu Arg Arg Gln Tyr Leu Glu Glu Leu Gln Ser Val Gln
 805 810 815
 Arg Glu Leu Glu Val Leu Ser Glu Gln Tyr Ser Gln Lys Cys Leu Glu
 820 825 830
 Asn Ala His Leu Ala Gln Ala Leu Glu Ala Glu Arg Gln Ala Leu Arg
 835 840 845
 Gln Cys Gln Arg Glu Asn Gln Glu Leu Asn Ala His Asn Gln Glu Leu

850	855	860
Asn Asn Arg Leu Ala Ala Glu Ile Thr Arg Leu Arg Thr Leu Leu Thr		
865	870	875 880
Gly Asp Gly Gly Gly Glu Ser Thr Gly Leu Pro Leu Thr Gln Gly Lys		
885	890	895
Asp Ala Tyr Glu Leu Glu Val Leu Leu Arg Val Lys Glu Ser Glu Ile		
900	905	910
Gln Tyr Leu Lys Gln Glu Ile Ser Ser Leu Lys Asp Glu Leu Gln Thr		
915	920	925
Ala Leu Arg Asp Lys Lys Tyr Ala Ser Asp Lys Tyr Lys Asp Ile Tyr		
930	935	940
Thr Glu Leu Ser Ile Ala Lys Ala Lys Ala Asp Cys Asp Ile Ser Arg		
945	950	955 960
Leu Lys Glu Gln Leu Lys Ala Ala Thr Glu Ala Leu Gly Glu Lys Ser		
965	970	975
Pro Glu Gly Thr Thr Val Ser Gly Tyr Asp Ile Met Lys Ser Lys Ser		
980	985	990
Asn Pro Asp Phe Leu Lys Lys Asp Arg Ser Cys Val Thr Arg Gln Leu		
995	1000	1005
Arg Asn Ile Arg Ser Lys Ser Val Ile Glu Gln Val Ser Trp Asp Asn		
1010	1015	1020

<210> 489

<211> 2295

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (651).. (1778)

<400> 489

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 cccctgcaga ggggcccggg ggcctaggga gggcgggagg gctgcttgga ggcagaggca 180
 gcgagaggcg gcggcgggca gagccgagga ggaggaggag gagagaggaa agagccgagc 240
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Met Leu

1

gat cgg gat gtg ggc cca act ccc atg tac cca cct aca tac ctg gag 704
 Asp Arg Asp Val Gly Pro Thr Pro Met Tyr Pro Pro Thr Tyr Leu Glu

5

10

15

cct ggg atc ggg agg cac aca cca tat ggt aac caa acc gac tat aga 752
 Pro Gly Ile Gly Arg His Thr Pro Tyr Gly Asn Gln Thr Asp Tyr Arg

20

25

30

ata ttt gag ctt aac aaa cgg cta cag aac tgg aca gag gag tgt gac 800
 Ile Phe Glu Leu Asn Lys Arg Leu Gln Asn Trp Thr Glu Glu Cys Asp

35

40

45

50

aat ctc tgg tgg gat gct ttc aca act gag ttc ttt gaa gat gac gcc 848
 Asn Leu Trp Trp Asp Ala Phe Thr Thr Glu Phe Phe Glu Asp Asp Ala

55

60

65

atg ctg acc atc act ttc tgc ttg gag gat gga cca aag aga tat acc 896

1318/2644

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 Ser Leu Ser Pro Arg Asp Cys Leu Lys Thr Cys Leu Phe Gln Lys Trp
 230 235 240
 cag cga atg gta gcg cct ccc gcg gag ccc gca cga cag cag ccc agc 1424
 Gln Arg Met Val Ala Pro Pro Ala Glu Pro Ala Arg Gln Gln Pro Ser
 245 250 255
 aaa cgg agg aaa cgg aag atg tca ggg ggt agc acc atg agc tcg ggg 1472
 Lys Arg Arg Lys Arg Lys Met Ser Gly Gly Ser Thr Met Ser Ser Gly
 260 265 270
 ggt ggc aac acc aac aac agc aac agc aag aag aag agc cca gcc agc 1520
 Gly Gly Asn Thr Asn Asn Ser Asn Ser Lys Lys Lys Ser Pro Ala Ser
 275 280 285 290
 acc ttc gct ctc tcc agc cag gta cct gat gtg atg gtg gtg ggg gag 1568
 Thr Phe Ala Leu Ser Ser Gln Val Pro Asp Val Met Val Val Gly Glu
 295 300 305
 ccc acc ctg atg ggc ggg gag ttc ggg gac gag gac gag agg ctc atc 1616
 Pro Thr Leu Met Gly Gly Glu Phe Gly Asp Glu Asp Glu Arg Leu Ile
 310 315 320
 acc cgg ctg gag aac acc cag ttt gac gcg gcc aac ggc att gac gac 1664
 Thr Arg Leu Glu Asn Thr Gln Phe Asp Ala Ala Asn Gly Ile Asp Asp
 325 330 335
 gag gac agc ttt aac aac tcc ccc gca ctg ggc gcc aac agc ccc tgg 1712
 Glu Asp Ser Phe Asn Asn Ser Pro Ala Leu Gly Ala Asn Ser Pro Trp
 340 345 350
 aac agc aag cct cca tcc agc caa gag agc aaa tcg gag aat ccc acg 1760
 Asn Ser Lys Pro Pro Ser Ser Gln Glu Ser Lys Ser Glu Asn Pro Thr
 355 360 365 370
 tca cag gct tcc cag tga aggccctacc acggccaccc agcgctctgc 1808
 Ser Gln Ala Ser Gln

375

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<211> 375

<212> PRT

<213> Mus musculus

<400> 490

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 Tyr Arg Ile Phe Glu Leu Asn Lys Arg Leu Gln Asn Trp Thr Glu Glu
 35 40 45
 Cys Asp Asn Leu Trp Trp Asp Ala Phe Thr Thr Glu Phe Phe Glu Asp
 50 55 60
 Asp Ala Met Leu Thr Ile Thr Phe Cys Leu Glu Asp Gly Pro Lys Arg
 65 70 75 80
 Tyr Thr Ile Gly Arg Thr Leu Ile Pro Arg Tyr Phe Arg Ser Ile Phe
 85 90 95

Glu Gly Gly Ala Thr Glu Leu Tyr Tyr Val Leu Lys His Pro Lys Glu
 100 105 110
 Ala Phe His Ser Asn Phe Val Ser Leu Asp Cys Asp Gln Gly Ser Met
 115 120 125
 Val Thr Gln His Gly Lys Pro Met Phe Thr Gln Val Cys Val Glu Gly
 130 135 140
 Arg Leu Tyr Leu Glu Phe Met Phe Asp Asp Met Met Arg Ile Lys Thr
 145 150 155 160
 Trp His Phe Ser Ile Arg Gln His Arg Glu Leu Ile Pro Arg Ser Ile
 165 170 175
 Leu Ala Met His Ala Gln Asp Pro Gln Met Leu Asp Gln Leu Ser Lys
 180 185 190
 Asn Ile Thr Arg Cys Gly Leu Ser Asn Ser Thr Leu Asn Tyr Leu Arg
 195 200 205
 Leu Cys Val Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys
 210 215 220
 Thr Tyr Ser Leu Ser Pro Arg Asp Cys Leu Lys Thr Cys Leu Phe Gln
 225 230 235 240
 Lys Trp Gln Arg Met Val Ala Pro Pro Ala Glu Pro Ala Arg Gln Gln
 245 250 255
 Pro Ser Lys Arg Arg Lys Arg Lys Met Ser Gly Gly Ser Thr Met Ser
 260 265 270
 Ser Gly Gly Gly Asn Thr Asn Asn Ser Asn Ser Lys Lys Lys Ser Pro
 275 280 285
 Ala Ser Thr Phe Ala Leu Ser Ser Gln Val Pro Asp Val Met Val Val
 290 295 300
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1322/2644

<400> 492

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<210> 493

<211> 1997

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<213> Mus musculus

<220>

<221> CDS

<222> (169).. (1635)

<400> 493

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 ggagcagccg gaggaggagc cgcagccggg aggcggcggc ctgagccc atg gcg tac 177

Met Ala Tyr

1

agt caa gga ggc ggc aag aag aaa gtg tgc tac tac tat gat ggt gat 225
 Ser Gln Gly Gly Gly Lys Lys Lys Val Cys Tyr Tyr Tyr Asp Gly Asp

5

10

15

att ggc aat tat tat tat ggc cag ggt cat ccc atg aag cct cat aga 273
 Ile Gly Asn Tyr Tyr Tyr Gly Gln Gly His Pro Met Lys Pro His Arg

20

25

30

35

atc cgg atg act cat aac ttg ctg cta aat tat ggt tta tac cga aaa 321
 Ile Arg Met Thr His Asn Leu Leu Leu Asn Tyr Gly Leu Tyr Arg Lys

40	45	50	
atg gaa ata tat agg cct cat aaa gcc act gct gaa gaa atg act aaa			369
Met Glu Ile Tyr Arg Pro His Lys Ala Thr Ala Glu Glu Met Thr Lys			
55	60	65	
tac cac agc gat gag tat atc aag ttt cta cga tca ata aga cca gat			417
Tyr His Ser Asp Glu Tyr Ile Lys Phe Leu Arg Ser Ile Arg Pro Asp			
70	75	80	
aat atg tct gag tac agt aag cag atg cag aga ttt aac gtc gga gaa			465
Asn Met Ser Glu Tyr Ser Lys Gln Met Gln Arg Phe Asn Val Gly Glu			
85	90	95	
gat tgt ccg gtg ttt gat gga ctc ttt gag ttt tgt cag ctc tcc acg			513
Asp Cys Pro Val Phe Asp Gly Leu Phe Glu Phe Cys Gln Leu Ser Thr			
100	105	110	115
ggt ggt tca gtt gct ggg gct gtg aaa tta aac cgg caa caa act gat			561
Gly Gly Ser Val Ala Gly Ala Val Lys Leu Asn Arg Gln Gln Thr Asp			
120	125	130	
atg gct gtc aat tgg gct gga gga cta cat cat gcc aag aag tca gaa			609
Met Ala Val Asn Trp Ala Gly Gly Leu His His Ala Lys Lys Ser Glu			
135	140	145	
gca tca ggg ttc tgc tat gtt aat gat att gtg ctt gcc atc ctc gaa			657
Ala Ser Gly Phe Cys Tyr Val Asn Asp Ile Val Leu Ala Ile Leu Glu			
150	155	160	
tta ctt aag tat cat cag aga gtc tta tat att gac ata gac atc cac			705
Leu Leu Lys Tyr His Gln Arg Val Leu Tyr Ile Asp Ile Asp Ile His			
165	170	175	
cat ggt gat ggt gtt gag gaa gct ttt tat aca aca gat cgc gtg atg			753
His Gly Asp Gly Val Glu Glu Ala Phe Tyr Thr Thr Asp Arg Val Met			
180	185	190	195
acc gtc tca ttc cat aaa tat ggg gaa tac ttt cct gga aca gga gac			801

Thr Val Ser Phe His Lys Tyr Gly Glu Tyr Phe Pro Gly Thr Gly Asp
 200 205 210
 ttg agg gat att ggt gct gga aag gga aaa tac tat gct gtc aat ttt 849
 Leu Arg Asp Ile Gly Ala Gly Lys Gly Lys Tyr Tyr Ala Val Asn Phe
 215 220 225
 ccc atg aga gat ggt ata gat gat gaa tca tat gga caa att ttt aag 897
 Pro Met Arg Asp Gly Ile Asp Asp Glu Ser Tyr Gly Gln Ile Phe Lys
 230 235 240
 cct atc atc tca aaa gtg atg gag atg tac cag cct agc gcg gtg gtg 945
 Pro Ile Ile Ser Lys Val Met Glu Met Tyr Gln Pro Ser Ala Val Val
 245 250 255
 ctg cag tgt ggc gca gac tcc ctg tct ggg gac agg ctt ggt tgt ttc 993
 Leu Gln Cys Gly Ala Asp Ser Leu Ser Gly Asp Arg Leu Gly Cys Phe
 260 265 270 275
 aat cta act gtc aaa ggt cat gct aaa tgt gta gaa gta gcg aaa act 1041
 Asn Leu Thr Val Lys Gly His Ala Lys Cys Val Glu Val Ala Lys Thr
 280 285 290
 ttt aac ttg cca ttg ctg atg ctc ggt gga gga ggc tac aca atc cgg 1089
 Phe Asn Leu Pro Leu Leu Met Leu Gly Gly Gly Gly Tyr Thr Ile Arg
 295 300 305
 aat gtt gcc cga tgt tgg aca tat gag act gca gtt gcc ctt gat tgt 1137
 Asn Val Ala Arg Cys Trp Thr Tyr Glu Thr Ala Val Ala Leu Asp Cys
 310 315 320
 gaa att ccc aat gag ttg cca tat aat gat tac ttt gag tat ttt gga 1185
 Glu Ile Pro Asn Glu Leu Pro Tyr Asn Asp Tyr Phe Glu Tyr Phe Gly
 325 330 335
 cca gac ttc aaa ctg cat att agt cct tca aac atg aca aac cag aac 1233
 Pro Asp Phe Lys Leu His Ile Ser Pro Ser Asn Met Thr Asn Gln Asn
 340 345 350 355

act cca gaa tat atg gaa aag ata aaa cag cgt tta ttt gaa aat cta 1281
 Thr Pro Glu Tyr Met Glu Lys Ile Lys Gln Arg Leu Phe Glu Asn Leu
 360 365 370
 cgt atg tta cca cat gca cct ggt gtt caa atg caa gct att cca gag 1329
 Arg Met Leu Pro His Ala Pro Gly Val Gln Met Gln Ala Ile Pro Glu
 375 380 385
 gat gct gtt cat gaa gac agt gga gat gag gat gga gaa gac ccg gac 1377
 Asp Ala Val His Glu Asp Ser Gly Asp Glu Asp Gly Glu Asp Pro Asp
 390 395 400
 aaa aga att tcc att cga gca tca gac aaa cgg ata gct tgc gat gaa 1425
 Lys Arg Ile Ser Ile Arg Ala Ser Asp Lys Arg Ile Ala Cys Asp Glu
 405 410 415
 gag ttt tca gat tct gag gat gaa ggt gaa gga ggt cgt agg aat gtt 1473
 Glu Phe Ser Asp Ser Glu Asp Glu Gly Glu Gly Gly Arg Arg Asn Val
 420 425 430 435
 gct gat cat aag aaa gga gca aag aag gct agg att gaa gaa gac aag 1521
 Ala Asp His Lys Lys Gly Ala Lys Lys Ala Arg Ile Glu Glu Asp Lys
 440 445 450
 aag gag aca gag gac aag aag aca gat gtt aag gaa gaa gac aaa tcc 1569
 Lys Glu Thr Glu Asp Lys Lys Thr Asp Val Lys Glu Glu Asp Lys Ser
 455 460 465
 aag gac aat agt ggt gag aaa aca gac ccc aaa gga gcc aag tca gaa 1617
 Lys Asp Asn Ser Gly Glu Lys Thr Asp Pro Lys Gly Ala Lys Ser Glu
 470 475 480
 caa ctc agc aac cct tga atttgactct ccaacttttag gaacctcgaa 1665
 Gln Leu Ser Asn Pro
 485
 aagtgagacg attctgggat aagaaacctt cctgttttga ggacattggc ttcattttat 1725
 actgttttgg catggactgt atttattttc aaaatggctt gtttttgttt ttcttggcaa 1785

1327/2644

Lys Ser Glu Ala Ser Gly Phe Cys Tyr Val Asn Asp Ile Val Leu Ala
 145 150 155 160
 Ile Leu Glu Leu Leu Lys Tyr His Gln Arg Val Leu Tyr Ile Asp Ile
 165 170 175
 Asp Ile His His Gly Asp Gly Val Glu Glu Ala Phe Tyr Thr Thr Asp
 180 185 190
 Arg Val Met Thr Val Ser Phe His Lys Tyr Gly Glu Tyr Phe Pro Gly
 195 200 205
 Thr Gly Asp Leu Arg Asp Ile Gly Ala Gly Lys Gly Lys Tyr Tyr Ala
 210 215 220
 Val Asn Phe Pro Met Arg Asp Gly Ile Asp Asp Glu Ser Tyr Gly Gln
 225 230 235 240
 Ile Phe Lys Pro Ile Ile Ser Lys Val Met Glu Met Tyr Gln Pro Ser
 245 250 255
 Ala Val Val Leu Gln Cys Gly Ala Asp Ser Leu Ser Gly Asp Arg Leu
 260 265 270
 Gly Cys Phe Asn Leu Thr Val Lys Gly His Ala Lys Cys Val Glu Val
 275 280 285
 Ala Lys Thr Phe Asn Leu Pro Leu Leu Met Leu Gly Gly Gly Gly Tyr
 290 295 300
 Thr Ile Arg Asn Val Ala Arg Cys Trp Thr Tyr Glu Thr Ala Val Ala
 305 310 315 320
 Leu Asp Cys Glu Ile Pro Asn Glu Leu Pro Tyr Asn Asp Tyr Phe Glu
 325 330 335
 Tyr Phe Gly Pro Asp Phe Lys Leu His Ile Ser Pro Ser Asn Met Thr
 340 345 350
 Asn Gln Asn Thr Pro Glu Tyr Met Glu Lys Ile Lys Gln Arg Leu Phe
 355 360 365
 Glu Asn Leu Arg Met Leu Pro His Ala Pro Gly Val Gln Met Gln Ala

370	375	380
Ile Pro Glu Asp Ala Val His Glu Asp Ser Gly Asp Glu Asp Gly Glu		
385	390	395
Asp Pro Asp Lys Arg Ile Ser Ile Arg Ala Ser Asp Lys Arg Ile Ala		400
	405	410
Cys Asp Glu Glu Phe Ser Asp Ser Glu Asp Glu Gly Glu Gly Gly Arg		415
	420	425
Arg Asn Val Ala Asp His Lys Lys Gly Ala Lys Lys Ala Arg Ile Glu		430
	435	440
Glu Asp Lys Lys Glu Thr Glu Asp Lys Lys Thr Asp Val Lys Glu Glu		445
	450	455
Asp Lys Ser Lys Asp Asn Ser Gly Glu Lys Thr Asp Pro Lys Gly Ala		460
465	470	475
Lys Ser Glu Gln Leu Ser Asn Pro		480
	485	

<210> 495

<211> 468

<212> DNA

<213> Mus musculus

<400> 495

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actggctgcg gcactcgcgg gaacctgggtg tgggccatgc gaatgtactg tacaaccaca 180

tcttcacaat gtccagtagc cgagtccacc agttgtcaca gattgggggtg gtagcttcca 240

ggttgtacct aagtttggag ttagacttga aatgaaagtg ctagcacagt tgtgttgttg 300

gtttgtact tccatagitt acttgacatg gttcagactg accaagcata gttttcagt 360

acagtc tgia gcagttgaag ctgtgaaatg tgctagggcg agcatttgtc ctcgtgtgtg 420
gtgactttga gtgtaacagc gtgatctgac caatagtaca cacagacg 468

<210> 496

<211> 1660

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (75).. (1217)

<400> 496

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cagcctagcc cggg atg aga aat tgc aaa atg gcc cga gtc gcc agt gtg 110
Met Arg Asn Cys Lys Met Ala Arg Val Ala Ser Val
1 5 10
cta ggg ctg gtc atg ctc agc gtg gcc ctg ctg att tta tgc ctt atc 158
Leu Gly Leu Val Met Leu Ser Val Ala Leu Leu Ile Leu Ser Leu Ile
15 20 25
agc tac gtg tct ctg aaa aag gag aac atc ttc acc act ccc aag tac 206
Ser Tyr Val Ser Leu Lys Lys Glu Asn Ile Phe Thr Thr Pro Lys Tyr
30 35 40
gcc agc ccg ggg gcg ccc cga atg tac atg ttc cac gcg gga ttc cgg 254
Ala Ser Pro Gly Ala Pro Arg Met Tyr Met Phe His Ala Gly Phe Arg
45 50 55 60
tca cag ttt gca ctg aag ttt cta gac cag tca ttt gtg ccc att acg 302
Ser Gln Phe Ala Leu Lys Phe Leu Asp Gln Ser Phe Val Pro Ile Thr
65 70 75

aat tct ctc acc cat gaa ctc caa gag aaa cct tct aaa tgg aca ttt 350
 Asn Ser Leu Thr His Glu Leu Gln Glu Lys Pro Ser Lys Trp Thr Phe
 80 85 90
 aat cgg aca gcg ttt tta cat caa agg caa gaa att ctt cag cat gtc 398
 Asn Arg Thr Ala Phe Leu His Gln Arg Gln Glu Ile Leu Gln His Val
 95 100 105
 gat gta ata aaa aat ttt tct ttg acc aag agt agt gtt cgg att gga 446
 Asp Val Ile Lys Asn Phe Ser Leu Thr Lys Ser Ser Val Arg Ile Gly
 110 115 120
 caa cta atg cat tat gat tat tcc agc cat aaa tat gtc ttc tcg att 494
 Gln Leu Met His Tyr Asp Tyr Ser Ser His Lys Tyr Val Phe Ser Ile
 125 130 135 140
 agc aat aac ttc cgg tcc ctg ctc cca gat gtg tcg ccc att atg aat 542
 Ser Asn Asn Phe Arg Ser Leu Leu Pro Asp Val Ser Pro Ile Met Asn
 145 150 155
 aag cgt tat aat gtt tgt gct gtg gtt gga aac agt gga atc ttg aca 590
 Lys Arg Tyr Asn Val Cys Ala Val Val Gly Asn Ser Gly Ile Leu Thr
 160 165 170
 ggg agt cag tgt gga caa gaa ata gat aaa tca gat ttt gtt tct cga 638
 Gly Ser Gln Cys Gly Gln Glu Ile Asp Lys Ser Asp Phe Val Ser Arg
 175 180 185
 tgc aat ttt gcc ccg aca gag gct ttc cac aaa gat gtt gga agg aaa 686
 Cys Asn Phe Ala Pro Thr Glu Ala Phe His Lys Asp Val Gly Arg Lys
 190 195 200
 acc aac ctc aca acc ttc aat ccg agc atc tta gag aaa tat tac aac 734
 Thr Asn Leu Thr Thr Phe Asn Pro Ser Ile Leu Glu Lys Tyr Tyr Asn
 205 210 215 220
 aat ctt tta acc att cag gac cgt aac aac ttc ttc ctc agt tta aaa 782
 Asn Leu Leu Thr Ile Gln Asp Arg Asn Asn Phe Phe Leu Ser Leu Lys

225	230	235	
aag ctt gat ggg gcc ata ctt tgg atc cct gca ttt ttc ttc cac act			830
Lys Leu Asp Gly Ala Ile Leu Trp Ile Pro Ala Phe Phe Phe His Thr			
240	245	250	
tct gca act gta acg aga acg cta gtg gat ttt ttt gtt gag cac aga			878
Ser Ala Thr Val Thr Arg Thr Leu Val Asp Phe Phe Val Glu His Arg			
255	260	265	
ggt cag tta aag gtc cag ttg gct tgg cct gga aat atc atg caa cat			926
Gly Gln Leu Lys Val Gln Leu Ala Trp Pro Gly Asn Ile Met Gln His			
270	275	280	
gtc aac agg tac tgg aaa aac aaa cac ctg tca ccc aaa cga ctg agc			974
Val Asn Arg Tyr Trp Lys Asn Lys His Leu Ser Pro Lys Arg Leu Ser			
285	290	295	300
aca ggt atc cta atg tat act ctt gca tct gca ata tgt gaa gag atc			1022
Thr Gly Ile Leu Met Tyr Thr Leu Ala Ser Ala Ile Cys Glu Glu Ile			
305	310	315	
cac ttg tac ggt ttc tgg ccc ttt gga ttt gac ccc aac acc agg gag			1070
His Leu Tyr Gly Phe Trp Pro Phe Gly Phe Asp Pro Asn Thr Arg Glu			
320	325	330	
gat ctg ccc tac cac tac tat gac aaa aaa gga acc aaa ttt acc acc			1118
Asp Leu Pro Tyr His Tyr Tyr Asp Lys Lys Gly Thr Lys Phe Thr Thr			
335	340	345	
aag tgg cag gag tct cac cag ctg cct gct gag ttt cag ctg ctc tat			1166
Lys Trp Gln Glu Ser His Gln Leu Pro Ala Glu Phe Gln Leu Leu Tyr			
350	355	360	
cga atg cat ggg gaa ggg ctc acg aag ctc act ctg tca cac tgt gcc			1214
Arg Met His Gly Glu Gly Leu Thr Lys Leu Thr Leu Ser His Cys Ala			
365	370	375	380
taa gaactccaaa tggaaagtgc caaacggctg attaaaaagt gccctcaccc			1267

ccaaaccaaa ttgaatagtc tccagaacag aacccataga caatctggca aagcctgtct 1327
 gccacttaca aggaaagacg ccttctcttc ctcttttgca ctgctctttg aatggcttta 1387
 acaaacttag gacaggtgca ttgaagccgt gtgatttaga ctigattggg aaaaggttat 1447
 attgcatttg gaagtatgct gcacagagaa tagcttgaaa tagttctaag ttigtatttt 1507
 aataataaac cgactcccat gtgaatgagg aatgtgactg tcatctcctc ctctctactt 1567
 tgatatagtc ctcaacaacca gggagctctg gccagctcca gcaggatctc tttagccaag 1627
 gggatcagaa tcttcaaaaa aaaaaaaaaa aaa 1660

<210> 497

<211> 380

<212> PRT

<213> Mus musculus

<400> 497

Met Arg Asn Cys Lys Met Ala Arg Val Ala Ser Val Leu Gly Leu Val

1 5 10 15

Met Leu Ser Val Ala Leu Leu Ile Leu Ser Leu Ile Ser Tyr Val Ser

20 25 30

Leu Lys Lys Glu Asn Ile Phe Thr Thr Pro Lys Tyr Ala Ser Pro Gly

35 40 45

Ala Pro Arg Met Tyr Met Phe His Ala Gly Phe Arg Ser Gln Phe Ala

50 55 60

Leu Lys Phe Leu Asp Gln Ser Phe Val Pro Ile Thr Asn Ser Leu Thr

65 70 75 80

His Glu Leu Gln Glu Lys Pro Ser Lys Trp Thr Phe Asn Arg Thr Ala

85 90 95

Phe Leu His Gln Arg Gln Glu Ile Leu Gln His Val Asp Val Ile Lys

100 105 110

Asn Phe Ser Leu Thr Lys Ser Ser Val Arg Ile Gly Gln Leu Met His

115	120	125
Tyr Asp Tyr Ser Ser His Lys Tyr Val Phe Ser Ile Ser Asn Asn Phe		
130	135	140
Arg Ser Leu Leu Pro Asp Val Ser Pro Ile Met Asn Lys Arg Tyr Asn		
145	150	155
Val Cys Ala Val Val Gly Asn Ser Gly Ile Leu Thr Gly Ser Gln Cys		160
165	170	175
Gly Gln Glu Ile Asp Lys Ser Asp Phe Val Ser Arg Cys Asn Phe Ala		
180	185	190
Pro Thr Glu Ala Phe His Lys Asp Val Gly Arg Lys Thr Asn Leu Thr		
195	200	205
Thr Phe Asn Pro Ser Ile Leu Glu Lys Tyr Tyr Asn Asn Leu Leu Thr		
210	215	220
Ile Gln Asp Arg Asn Asn Phe Phe Leu Ser Leu Lys Lys Leu Asp Gly		
225	230	235
Ala Ile Leu Trp Ile Pro Ala Phe Phe Phe His Thr Ser Ala Thr Val		240
245	250	255
Thr Arg Thr Leu Val Asp Phe Phe Val Glu His Arg Gly Gln Leu Lys		
260	265	270
Val Gln Leu Ala Trp Pro Gly Asn Ile Met Gln His Val Asn Arg Tyr		
275	280	285
Trp Lys Asn Lys His Leu Ser Pro Lys Arg Leu Ser Thr Gly Ile Leu		
290	295	300
Met Tyr Thr Leu Ala Ser Ala Ile Cys Glu Glu Ile His Leu Tyr Gly		
305	310	315
Phe Trp Pro Phe Gly Phe Asp Pro Asn Thr Arg Glu Asp Leu Pro Tyr		320
325	330	335
His Tyr Tyr Asp Lys Lys Gly Thr Lys Phe Thr Thr Lys Trp Gln Glu		
340	345	350

Ser His Gln Leu Pro Ala Glu Phe Gln Leu Leu Tyr Arg Met His Gly
 355 360 365
 Glu Gly Leu Thr Lys Leu Thr Leu Ser His Cys Ala
 370 375 380

<210> 498
 <211> 897
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1).. (897)

<400> 498
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 gat gaa gat gag gtt cga gtc gcg ctg gtg gtg cac tca ggt gct gcc 96
 Asp Glu Asp Glu Val Arg Val Ala Leu Val Val His Ser Gly Ala Ala
 20 25 30
 cgg ttg ggc agc ccg gac gac gag ttc ttc cag aag gtg cag aca att 144
 Arg Leu Gly Ser Pro Asp Asp Glu Phe Phe Gln Lys Val Gln Thr Ile
 35 40 45
 cgg cag act atg gcc aaa ctg gag agt aaa gtc cgg gag ttg gag aaa 192
 Arg Gln Thr Met Ala Lys Leu Glu Ser Lys Val Arg Glu Leu Glu Lys
 50 55 60
 cag cag gtc acc atc ctg gcc acg cct ctt ccc gag gag agc atg aag 240
 Gln Gln Val Thr Ile Leu Ala Thr Pro Leu Pro Glu Glu Ser Met Lys

65	70	75	80	
cag ggc ctg cag aac ctg cga gag gag atc aaa cag ctg ggg aga gag	288			
Gln Gly Leu Gln Asn Leu Arg Glu Glu Ile Lys Gln Leu Gly Arg Glu				
85	90	95		
gtc cgg gcg cag cta aaa gcc ata gag ccc cag aag gag gaa gct gat	336			
Val Arg Ala Gln Leu Lys Ala Ile Glu Pro Gln Lys Glu Glu Ala Asp				
100	105	110		
gag aat tac aac tca gtc aac aca agg atg aag aaa acc cag cat gga	384			
Glu Asn Tyr Asn Ser Val Asn Thr Arg Met Lys Lys Thr Gln His Gly				
115	120	125		
gtc ctg tcc cag caa ttt gtc gag ctc atc aac aag tgc aac tca atg	432			
Val Leu Ser Gln Gln Phe Val Glu Leu Ile Asn Lys Cys Asn Ser Met				
130	135	140		
cag tcc gaa tac cga gag aag aat gtg gag cgg atc cgg agg cag ctg	480			
Gln Ser Glu Tyr Arg Glu Lys Asn Val Glu Arg Ile Arg Arg Gln Leu				
145	150	155	160	
aag atc acc aat gct gga atg gtg tct gac gag gag ctg gaa cag atg	528			
Lys Ile Thr Asn Ala Gly Met Val Ser Asp Glu Glu Leu Glu Gln Met				
165	170	175		
ctg gac agt ggg cag agt gag gtg ttt gtg tct aat atc ctg aag gac	576			
Leu Asp Ser Gly Gln Ser Glu Val Phe Val Ser Asn Ile Leu Lys Asp				
180	185	190		
acg cag gtg act cgg cag gcc ctg aat gag atc tct gcg cgg cac agt	624			
Thr Gln Val Thr Arg Gln Ala Leu Asn Glu Ile Ser Ala Arg His Ser				
195	200	205		
gag atc cag cag ttg gag cgc agt atc cga gag ctc cat gag atc ttt	672			
Glu Ile Gln Gln Leu Glu Arg Ser Ile Arg Glu Leu His Glu Ile Phe				
210	215	220		
acg ttt cta gct acg gag gtg gag atg cag ggg gag atg atc aac cgc	720			

Thr Phe Leu Ala Thr Glu Val Glu Met Gln Gly Glu Met Ile Asn Arg
 225 230 235 240
 atc gag aag aac atc ctg agc tcg gcc gac tac gtg gaa cgt ggg caa 768
 Ile Glu Lys Asn Ile Leu Ser Ser Ala Asp Tyr Val Glu Arg Gly Gln
 245 250 255
 gag cac gtc aag ata gcc cta gag aat cag aag aag gcg agg aag aaa 816
 Glu His Val Lys Ile Ala Leu Glu Asn Gln Lys Lys Ala Arg Lys Lys
 260 265 270
 aaa gtc atg att gcc atc tgt gtc tct gtc act gtt ctc atc ttg gct 864
 Lys Val Met Ile Ala Ile Cys Val Ser Val Thr Val Leu Ile Leu Ala
 275 280 285
 gtc atc att ggc atc acc ata acc gtt gga taa 897
 Val Ile Ile Gly Ile Thr Ile Thr Val Gly
 290 295

<210> 499

<211> 298

<212> PRT

<213> Mus musculus

<400> 499

Met Arg Asp Arg Thr His Glu Leu Arg Gln Gly Asp Asn Ile Ser Asp
 1 5 10 15
 Asp Glu Asp Glu Val Arg Val Ala Leu Val Val His Ser Gly Ala Ala
 20 25 30
 Arg Leu Gly Ser Pro Asp Asp Glu Phe Phe Gln Lys Val Gln Thr Ile
 35 40 45
 Arg Gln Thr Met Ala Lys Leu Glu Ser Lys Val Arg Glu Leu Glu Lys
 50 55 60

290

295

<210> 500

<211> 1767

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (42).. (893)

<400> 500

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Met Ala Val Pro Pro

1 5

aca tac gcc gat ctt ggc aag tcc gcc agg gat gtc ttc acc aag ggc 104

Thr Tyr Ala Asp Leu Gly Lys Ser Ala Arg Asp Val Phe Thr Lys Gly

10 15 20

tac ggc ttt ggc tta ata aaa ctt gat ttg aaa acg aag tca gag aat 152

Tyr Gly Phe Gly Leu Ile Lys Leu Asp Leu Lys Thr Lys Ser Glu Asn

25 30 35

gga ttg gaa ttt acc agc tca ggc tct gcc aac acg gaa acc acc aaa 200

Gly Leu Glu Phe Thr Ser Ser Gly Ser Ala Asn Thr Glu Thr Thr Lys

40 45 50

gtg aac ggc agc ctg gaa acc aag tac aga tgg act gag tat ggg ctg 248

Val Asn Gly Ser Leu Glu Thr Lys Tyr Arg Trp Thr Glu Tyr Gly Leu

55 60 65

acg ttt aca gag aag tgg aac aca gac aac acc ctg ggc act gag atc 296

Thr Phe Thr Glu Lys Trp Asn Thr Asp Asn Thr Leu Gly Thr Glu Ile

70	75	80	85	
act gtg gaa gac cag ctt gct cgt gga ctg aag ctc acc ttt gat tgc	344			
Thr Val Glu Asp Gln Leu Ala Arg Gly Leu Lys Leu Thr Phe Asp Ser				
90	95	100		
tca ttc tgc ccg aac act ggg aaa aaa aat gct aaa atc aag aca ggg	392			
Ser Phe Ser Pro Asn Thr Gly Lys Lys Asn Ala Lys Ile Lys Thr Gly				
105	110	115		
tac aag agg gag cac atc aac ctc ggc tgt gac gtg gac ttt gac atc	440			
Tyr Lys Arg Glu His Ile Asn Leu Gly Cys Asp Val Asp Phe Asp Ile				
120	125	130		
gct ggg ccc tgc atc cgg ggc gct ctg gtg ctt ggc tat gag ggt tgg	488			
Ala Gly Pro Ser Ile Arg Gly Ala Leu Val Leu Gly Tyr Glu Gly Trp				
135	140	145		
ctg gct ggc tac cag atg aat ttt gag acc tgc aag tcc cga gtg acc	536			
Leu Ala Gly Tyr Gln Met Asn Phe Glu Thr Ser Lys Ser Arg Val Thr				
150	155	160	165	
cag agc aac ttc gca gtt ggc tat aag acg gat gaa ttc cag ctt cat	584			
Gln Ser Asn Phe Ala Val Gly Tyr Lys Thr Asp Glu Phe Gln Leu His				
170	175	180		
act aat gtg aat gac ggg aca gag ttt ggt ggc tcc att tac cag aag	632			
Thr Asn Val Asn Asp Gly Thr Glu Phe Gly Gly Ser Ile Tyr Gln Lys				
185	190	195		
gtg aac aag aag ttg gag act gct gtc aat ctc gcc tgg act gca gga	680			
Val Asn Lys Lys Leu Glu Thr Ala Val Asn Leu Ala Trp Thr Ala Gly				
200	205	210		
aac agt aac act cgc ttc gga ata gca gcc aag tat cag gtc gac cct	728			
Asn Ser Asn Thr Arg Phe Gly Ile Ala Ala Lys Tyr Gln Val Asp Pro				
215	220	225		
gat gcc tgc ttt tgc gcc aaa gtg aac aac tct agc ctg att ggc tta	776			

Asp Ala Cys Phe Ser Ala Lys Val Asn Asn Ser Ser Leu Ile Gly Leu
 230 235 240 245
 ggg tac act cag acc cta aaa cca ggt atc aaa ctg acg ttg tca gcc 824
 Gly Tyr Thr Gln Thr Leu Lys Pro Gly Ile Lys Leu Thr Leu Ser Ala
 250 255 260
 ctg ctc gat ggc aag aac gtc aat gcg ggt ggc cac aag ctt ggc cta 872
 Leu Leu Asp Gly Lys Asn Val Asn Ala Gly Gly His Lys Leu Gly Leu
 265 270 275
 gga ctg gaa ttt caa gca taa atgaatattg tacaatcggt taattttaaa 923
 Gly Leu Glu Phe Gln Ala
 280
 ctatitttgca gcatagctac cttcagaatt tagtgtacct tttaatgttg tatgtttgggg 983
 atgcgagagt tgataaatac cacgttagac ctccaggcta aggatgactc ggctttaagg 1043
 tgtttaccat ttcagaggta cagcagaaac cccattccag aaagggtcct ttttagctgt 1103
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 gccatttttag ggtggagagg gtgggcgtga tggagccagt cattcaggaa ttaattcttc 1463
 cttgtgttgt ggggtgggtt tctttctcct cctcctcctt ttttttttaa ttccttcttt 1523
 cgccattgca ccagagtatg aaatagcttc cggttctccg gctctgagct gggcggtgat 1583
 tgtggtcaca cctgacaac actagggtac tcaactgact cttttttag cctcaccact 1643
 attttttagc agtttaatgg gtacattata gagttttcca ttttgtgtgg aattagctcc 1703
 tccccitcaa atgctgtaat taacatcact taaaataaaa ctigaataaa atactgaaac 1763
 ctcc 1767

<210> 501

<211> 283

<212> PRT

<213> Mus musculus

<400> 501

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 20 25 30
 Thr Lys Ser Glu Asn Gly Leu Glu Phe Thr Ser Ser Gly Ser Ala Asn
 35 40 45
 Thr Glu Thr Thr Lys Val Asn Gly Ser Leu Glu Thr Lys Tyr Arg Trp
 50 55 60
 Thr Glu Tyr Gly Leu Thr Phe Thr Glu Lys Trp Asn Thr Asp Asn Thr
 65 70 75 80
 Leu Gly Thr Glu Ile Thr Val Glu Asp Gln Leu Ala Arg Gly Leu Lys
 85 90 95
 Leu Thr Phe Asp Ser Ser Phe Ser Pro Asn Thr Gly Lys Lys Asn Ala
 100 105 110
 Lys Ile Lys Thr Gly Tyr Lys Arg Glu His Ile Asn Leu Gly Cys Asp
 115 120 125
 Val Asp Phe Asp Ile Ala Gly Pro Ser Ile Arg Gly Ala Leu Val Leu
 130 135 140
 Gly Tyr Glu Gly Trp Leu Ala Gly Tyr Gln Met Asn Phe Glu Thr Ser
 145 150 155 160
 Lys Ser Arg Val Thr Gln Ser Asn Phe Ala Val Gly Tyr Lys Thr Asp
 165 170 175
 Glu Phe Gln Leu His Thr Asn Val Asn Asp Gly Thr Glu Phe Gly Gly
 180 185 190
 Ser Ile Tyr Gln Lys Val Asn Lys Lys Leu Glu Thr Ala Val Asn Leu

195 200 205
 Ala Trp Thr Ala Gly Asn Ser Asn Thr Arg Phe Gly Ile Ala Ala Lys
 210 215 220
 Tyr Gln Val Asp Pro Asp Ala Cys Phe Ser Ala Lys Val Asn Asn Ser
 225 230 235 240
 Ser Leu Ile Gly Leu Gly Tyr Thr Gln Thr Leu Lys Pro Gly Ile Lys
 245 250 255
 Leu Thr Leu Ser Ala Leu Leu Asp Gly Lys Asn Val Asn Ala Gly Gly
 260 265 270
 His Lys Leu Gly Leu Gly Leu Glu Phe Gln Ala
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<210> 502

<211> 264

<212> DNA

<213> Mus musculus

<400> 502

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 tcggcaaggc acctcttgga aggcctcctg cagaaggacc ggaccaagag gctgggtgcc 180
 aaggatgact ttgtgagtgt tggttgtcct gctgtcatgg gaccttgggg aagaaggttg 240
 actttgtgac ctgtgtattga gtgc 264

<210> 503

<211> 1707

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (113).. (1549)

<400> 503

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 gatTTTTtctc tgcccccttct caaatcatcg gcagtagaaa agagaagaaa ac atg tca 118

Met Ser

1

gga cac aaa tgt tat tcc tgg gag ttg cag gac cgg ttt gct caa gat 166
 Gly His Lys Cys Tyr Ser Trp Glu Leu Gln Asp Arg Phe Ala Gln Asp

5

10

15

aag tca gtt gtc aat aag atg cag cag aaa tat tgg gag acc aag cag 214
 Lys Ser Val Val Asn Lys Met Gln Gln Lys Tyr Trp Glu Thr Lys Gln

20

25

30

gcc ttt atc aaa gcc acg ggg aag aag gaa gat gaa cat gtg gtt gct 262
 Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His Val Val Ala

35

40

45

50

tct gat gca gac ctg gat gcc aag ctg gag ctg ttt cac tca atc cag 310
 Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His Ser Ile Gln

55

60

65

aga acc tgt ctg gac ttg tct aaa gca atc gtg ctc tat caa aag aga 358
 Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr Gln Lys Arg

70

75

80

ata tgt ttc ttg tct caa gag gaa aat gaa ctg gga aag ttt ctt cga 406
 Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys Phe Leu Arg

85

90

95

tct caa ggc ttc caa gac aaa acc cga gca gga aaa atg atg caa gcc 454
 Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met Met Gln Ala

100	105	110	
acg ggc aag gcc ctc tgc ttt tcc tcc cag caa agg ttg gcc ttg aga	502		
Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu Ala Leu Arg			
115	120	125	130
aac cct ttg tgt cga ttt cac caa gaa gta gaa act ttt aga cat cgg	550		
Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe Arg His Arg			
	135	140	145
gcc atc tct gat acc tgg ctg aca gtg aac cgc atg gag cag tac agg	598		
Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu Gln Tyr Arg			
	150	155	160
aca gaa tac aga gga gcg ttg tta tgg atg aag gac gtg tct cag gaa	646		
Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val Ser Gln Glu			
	165	170	175
ctt gat cca gac ctc tac aag caa atg gag aag ttc agg aag gtg cag	694		
Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg Lys Val Gln			
	180	185	190
aca caa gtc cgc ctt gcg aaa aaa aac ttt gac aag ttg aag atg gat	742		
Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp Lys Leu Lys Met Asp			
195	200	205	210
gtg tgt caa aag gtg gat ctt ctt gga gca agc aga tgt aac ctc tta	790		
Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser Arg Cys Asn Leu Leu			
	215	220	225
tct cac atg cta gca aca tac cag acc act ctg ctc cac ttt tgg gag	838		
Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu Leu His Phe Trp Glu			
	230	235	240
aaa act tct cac acc atg gca gcc att cat gag agc ttc aaa ggt tat	886		
Lys Thr Ser His Thr Met Ala Ala Ile His Glu Ser Phe Lys Gly Tyr			
	245	250	255
caa cca tat gaa ttc aca acg tta aag agc tta caa gac ccc atg aag	934		

Gln Pro Tyr Glu Phe Thr Thr Leu Lys Ser Leu Gln Asp Pro Met Lys	
260	265
	270
aag cta gtt gag aag gaa ggg aag aag acc tcc tgg agg gaa aac cgg	982
Lys Leu Val Glu Lys Glu Gly Lys Lys Thr Ser Trp Arg Glu Asn Arg	
275	280
	285
	290
gag gct gtg gca cca gag ccg agg cag tta att tct ttg gag gat gag	1030
Glu Ala Val Ala Pro Glu Pro Arg Gln Leu Ile Ser Leu Glu Asp Glu	
295	300
	305
cac aaa gat tca tct act tat aag act gaa gag gga aca agc gtt ttg	1078
His Lys Asp Ser Ser Thr Tyr Lys Thr Glu Glu Gly Thr Ser Val Leu	
310	315
	320
tct tcc gta gac aaa ggt tct gta cat gac aca tgc tca gga ccc ata	1126
Ser Ser Val Asp Lys Gly Ser Val His Asp Thr Cys Ser Gly Pro Ile	
325	330
	335
gat gaa cta tta gac ggg aaa ccc gag gaa gcg tgc ctg ggt ccc acg	1174
Asp Glu Leu Leu Asp Gly Lys Pro Glu Glu Ala Cys Leu Gly Pro Thr	
340	345
	350
gca ggg acc cca gaa cct gaa agt ggg gac aag gat gac ctc ttg ctg	1222
Ala Gly Thr Pro Glu Pro Glu Ser Gly Asp Lys Asp Asp Leu Leu Leu	
355	360
	365
	370
ttg aat gag atc ttc agc act tcc tgc ctg gat gag gga gag ttc agc	1270
Leu Asn Glu Ile Phe Ser Thr Ser Cys Leu Asp Glu Gly Glu Phe Ser	
375	380
	385
aga gag tgg gct gca gtg ttt gga gat gac cgg cta aag gag cca gca	1318
Arg Glu Trp Ala Ala Val Phe Gly Asp Asp Arg Leu Lys Glu Pro Ala	
390	395
	400
ccc atg ggg gcc caa gga gag cca gac ccc aag ccc cag ata ggc tcc	1366
Pro Met Gly Ala Gln Gly Glu Pro Asp Pro Lys Pro Gln Ile Gly Ser	
405	410
	415

gga ttc ctt ccg tca cag ctt tta gac caa aat atg aaa gat ctc cag 1414
 Gly Phe Leu Pro Ser Gln Leu Leu Asp Gln Asn Met Lys Asp Leu Gln
 420 425 430
 gcc tct ctg caa gag cct gcc aag gct gcc tcg gac ctg act gcc tgg 1462
 Ala Ser Leu Gln Glu Pro Ala Lys Ala Ala Ser Asp Leu Thr Ala Trp
 435 440 445 450
 ttc agc ctc ttt gct gac ctc gac ccc tta tca aac cct gat gct gtt 1510
 Phe Ser Leu Phe Ala Asp Leu Asp Pro Leu Ser Asn Pro Asp Ala Val
 455 460 465
 ggg aaa act gat aaa gaa cac gaa ttg ctc aat gca tga gtctgcaacc 1559
 Gly Lys Thr Asp Lys Glu His Glu Leu Leu Asn Ala
 470 475
 ttcaacaggg agccctcggg ccactccgcg gcacctcattc cagggttgc agaagtctaa 1619
 tatgctcggg gtgctgtttt aatatttaca tgccatttta ataaaatgag aggggtcaagg 1679
 ccctgtttct atcgctataa aaaaaaaaaa 1707

<210> 504

<211> 478

<212> PRT

<213> Mus musculus.

<400> 504

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 Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln Lys Tyr Trp Glu Thr
 20 25 30
 Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His Val
 35 40 45
 Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His Ser

50	55	60	
Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr Gln			
65	70	75	80
Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys Phe			
85	90	95	
Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met Met			
100	105	110	
Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu Ala			
115	120	125	
Leu Arg Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe Arg			
130	135	140	
His Arg Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu Gln			
145	150	155	160
Tyr Arg Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val Ser			
165	170	175	
Gln Glu Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg Lys			
180	185	190	
Val Gln Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp Lys Leu Lys			
195	200	205	
Met Asp Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser Arg Cys Asn			
210	215	220	
Leu Leu Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu Leu His Phe			
225	230	235	240
Trp Glu Lys Thr Ser His Thr Met Ala Ala Ile His Glu Ser Phe Lys			
245	250	255	
Gly Tyr Gln Pro Tyr Glu Phe Thr Thr Leu Lys Ser Leu Gln Asp Pro			
260	265	270	
Met Lys Lys Leu Val Glu Lys Glu Gly Lys Lys Thr Ser Trp Arg Glu			
275	280	285	

Asn Arg Glu Ala Val Ala Pro Glu Pro Arg Gln Leu Ile Ser Leu Glu
 290 295 300
 Asp Glu His Lys Asp Ser Ser Thr Tyr Lys Thr Glu Glu Gly Thr Ser
 305 310 315 320
 Val Leu Ser Ser Val Asp Lys Gly Ser Val His Asp Thr Cys Ser Gly
 325 330 335
 Pro Ile Asp Glu Leu Leu Asp Gly Lys Pro Glu Glu Ala Cys Leu Gly
 340 345 350
 Pro Thr Ala Gly Thr Pro Glu Pro Glu Ser Gly Asp Lys Asp Asp Leu
 355 360 365
 Leu Leu Leu Asn Glu Ile Phe Ser Thr Ser Cys Leu Asp Glu Gly Glu
 370 375 380
 Phe Ser Arg Glu Trp Ala Ala Val Phe Gly Asp Asp Arg Leu Lys Glu
 385 390 395 400
 Pro Ala Pro Met Gly Ala Gln Gly Glu Pro Asp Pro Lys Pro Gln Ile
 405 410 415
 Gly Ser Gly Phe Leu Pro Ser Gln Leu Leu Asp Gln Asn Met Lys Asp
 420 425 430
 Leu Gln Ala Ser Leu Gln Glu Pro Ala Lys Ala Ala Ser Asp Leu Thr
 435 440 445
 Ala Trp Phe Ser Leu Phe Ala Asp Leu Asp Pro Leu Ser Asn Pro Asp
 450 455 460
 Ala Val Gly Lys Thr Asp Lys Glu His Glu Leu Leu Asn Ala
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<210> 505

<211> 1410

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (40).. (1062)

<400> 505

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                                     1           5
cag ctg cgg cag gag gcc gag caa ctg aag aac caa att aga gat gct      102
Gln Leu Arg Gln Glu Ala Glu Gln Leu Lys Asn Gln Ile Arg Asp Ala
                10                15                20
cgt aaa gcg tgt gcc gat gcg act ctt tct cag atc aca aac aat att      150
Arg Lys Ala Cys Ala Asp Ala Thr Leu Ser Gln Ile Thr Asn Asn Ile
                25                30                35
gat cca gtg gga aga atc caa atg cgg acc agg aga aca ctg agg ggg      198
Asp Pro Val Gly Arg Ile Gln Met Arg Thr Arg Arg Thr Leu Arg Gly
                40                45                50
cat ctg gca aag att tat gcc atg cac tgg ggc aca gac tca agg ctc      246
His Leu Ala Lys Ile Tyr Ala Met His Trp Gly Thr Asp Ser Arg Leu
                55                60                65
ctt gtc agc gcc tct cag gat gga aaa ctc atc atc tgg gac agt tat      294
Leu Val Ser Ala Ser Gln Asp Gly Lys Leu Ile Ile Trp Asp Ser Tyr
                70                75                80                85
acc aca aac aag gtt cat gcc atc cct ctg cgc tcc tct tgg gtc atg      342
Thr Thr Asn Lys Val His Ala Ile Pro Leu Arg Ser Ser Trp Val Met
                90                95                100
acc tgc gca tac gct cct tct ggg aat tat gtg gcc tgt ggt ggc ctg      390
Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val Ala Cys Gly Gly Leu

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105	110	115	
gat aac atc tgc tcc att tac aac ctg aaa act cgt gaa ggg aat gtg			438
Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr Arg Glu Gly Asn Val			
120	125	130	
cgt gtg agt cgt gag ctg gcg gga cac aca ggt tat ctg tcc tgt tgc			486
Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly Tyr Leu Ser Cys Cys			
135	140	145	
cgg ttc ctg gat gac aat cag ata gtt acc agt tct gga gac acc aca			534
Arg Phe Leu Asp Asp Asn Gln Ile Val Thr Ser Ser Gly Asp Thr Thr			
150	155	160	165
tgt gcc ctg tgg gac atc gag act ggc cag cag aca acc aca ttt act			582
Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln Thr Thr Thr Phe Thr			
170	175	180	
gga cac act gga gat gtc atg agc ctg tct ctt gct cct gac acc aga			630
Gly His Thr Gly Asp Val Met Ser Leu Ser Leu Ala Pro Asp Thr Arg			
185	190	195	
ctg ttt gtc tct ggt gct tgt gat gct tca gcc aag ctc tgg gat gtc			678
Leu Phe Val Ser Gly Ala Cys Asp Ala Ser Ala Lys Leu Trp Asp Val			
200	205	210	
cga gaa ggg atg tgc cgg cag acc ttt aca gga cac gag tct gac atc			726
Arg Glu Gly Met Cys Arg Gln Thr Phe Thr Gly His Glu Ser Asp Ile			
215	220	225	
aat gcc ata tgt ttc ttt ccc aat ggc aat gcc ttt gcc act ggc tca			774
Asn Ala Ile Cys Phe Phe Pro Asn Gly Asn Ala Phe Ala Thr Gly Ser			
230	235	240	245
gac gat gcc aca tgc agg ctg ttt gac ctc cgt gca gac cag gag ctc			822
Asp Asp Ala Thr Cys Arg Leu Phe Asp Leu Arg Ala Asp Gln Glu Leu			
250	255	260	
atg acc tac tcc cat gac aac att atc tgt ggt atc aca tct gtt tcc			870

Met Thr Tyr Ser His Asp Asn Ile Ile Cys Gly Ile Thr Ser Val Ser
 265 270 275
 ttc tcc aag agt ggc cgc ctc ctc ctt gct ggg tat gat gac ttc aac 918
 Phe Ser Lys Ser Gly Arg Leu Leu Leu Ala Gly Tyr Asp Asp Phe Asn
 280 285 290
 tgt aat gtc tgg gat gca ctc aaa gct gac aga gca ggt gtc tta gct 966
 Cys Asn Val Trp Asp Ala Leu Lys Ala Asp Arg Ala Gly Val Leu Ala
 295 300 305
 gga cac gac aac cga gtc agc tgc ttg ggg gtg act gat gat ggc atg 1014
 Gly His Asp Asn Arg Val Ser Cys Leu Gly Val Thr Asp Asp Gly Met
 310 315 320 325
 gct gtg gca aca ggg tcc tgg gac agc ttc ctc aag atc tgg aac taa 1062
 Ala Val Ala Thr Gly Ser Trp Asp Ser Phe Leu Lys Ile Trp Asn
 330 335 340
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 tttttggitt attttgttat tttgttttgt tttgttttt ttgttttcat tttgttttgg 1362
 gttggtccaa ttttaaaagg aaatactaca ataaaaatgt taaccaga 1410

<210> 506

<211> 340

<212> PRT

<213> Mus musculus

<400> 506

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 Ile Thr Asn Asn Ile Asp Pro Val Gly Arg Ile Gln Met Arg Thr Arg
 35 40 45
 Arg Thr Leu Arg Gly His Leu Ala Lys Ile Tyr Ala Met His Trp Gly
 50 55 60
 Thr Asp Ser Arg Leu Leu Val Ser Ala Ser Gln Asp Gly Lys Leu Ile
 65 70 75 80
 Ile Trp Asp Ser Tyr Thr Thr Asn Lys Val His Ala Ile Pro Leu Arg
 85 90 95
 Ser Ser Trp Val Met Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val
 100 105 110
 Ala Cys Gly Gly Leu Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr
 115 120 125
 Arg Glu Gly Asn Val Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly
 130 135 140
 Tyr Leu Ser Cys Cys Arg Phe Leu Asp Asp Asn Gln Ile Val Thr Ser
 145 150 155 160
 Ser Gly Asp Thr Thr Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln
 165 170 175
 Thr Thr Thr Phe Thr Gly His Thr Gly Asp Val Met Ser Leu Ser Leu
 180 185 190
 Ala Pro Asp Thr Arg Leu Phe Val Ser Gly Ala Cys Asp Ala Ser Ala
 195 200 205
 Lys Leu Trp Asp Val Arg Glu Gly Met Cys Arg Gln Thr Phe Thr Gly
 210 215 220
 His Glu Ser Asp Ile Asn Ala Ile Cys Phe Phe Pro Asn Gly Asn Ala
 225 230 235 240
 Phe Ala Thr Gly Ser Asp Asp Ala Thr Cys Arg Leu Phe Asp Leu Arg

1354/2644

15	20	25	30	
act aga gtg ggg aaa aag aag aag aaa aca aag gga cca gat gct gcc	146			
Thr Arg Val Gly Lys Lys Lys Lys Lys Thr Lys Gly Pro Asp Ala Ala				
35	40	45		
agc aaa ctg cca ctg gta aca cct cac acc cag tgc cgc ctg aaa tta	194			
Ser Lys Leu Pro Leu Val Thr Pro His Thr Gln Cys Arg Leu Lys Leu				
50	55	60		
ctg aag cta gag aga ata aaa gac tat ctt ctc atg gag gag gaa ttc	242			
Leu Lys Leu Glu Arg Ile Lys Asp Tyr Leu Leu Met Glu Glu Glu Phe				
65	70	75		
att aga aac cag gaa cag atg aaa cca tta gaa gaa aag caa gag gag	290			
Ile Arg Asn Gln Glu Gln Met Lys Pro Leu Glu Glu Lys Gln Glu Glu				
80	85	90		
gaa aga tca aaa gtg gat gat ctc agg ggg acc ccc atg tct gta gga	338			
Glu Arg Ser Lys Val Asp Asp Leu Arg Gly Thr Pro Met Ser Val Gly				
95	100	105	110	
acc ttg gaa gag atc att gat gat aat cac gcc att gtg tcc aca tct	386			
Thr Leu Glu Glu Ile Ile Asp Asp Asn His Ala Ile Val Ser Thr Ser				
115	120	125		
gtg ggc tca gaa cac tac gtc agc atc ctg tgc ttt gta gac aag gat	434			
Val Gly Ser Glu His Tyr Val Ser Ile Leu Ser Phe Val Asp Lys Asp				
130	135	140		
ctg ctg gaa cca ggc tgc tcc gtc ctg ctc aac cac aag gtg cat gct	482			
Leu Leu Glu Pro Gly Cys Ser Val Leu Leu Asn His Lys Val His Ala				
145	150	155		
gtg ata ggg gtg cta atg gat gac acg gat ccc ctg gtc aca gtg atg	530			
Val Ile Gly Val Leu Met Asp Asp Thr Asp Pro Leu Val Thr Val Met				
160	165	170		
aag gtg gaa aag gcc ccc cag gag acc tac gca gat att ggg gga ctg	578			

Lys Val Glu Lys Ala Pro Gln Glu Thr Tyr Ala Asp Ile Gly Gly Leu
 175 180 185 190
 gac aac cag atc caa gaa att aag gag tct gtg gag ctc ccg ctt acc 626
 Asp Asn Gln Ile Gln Glu Ile Lys Glu Ser Val Glu Leu Pro Leu Thr
 195 200 205
 cat cct gag tat tac gag gag atg ggg ata aag ccc cct aag ggg gtc 674
 His Pro Glu Tyr Tyr Glu Glu Met Gly Ile Lys Pro Pro Lys Gly Val
 210 215 220
 att ctc tac ggt ccg cca gga aca ggt aaa act cta ttg gcc aaa gca 722
 Ile Leu Tyr Gly Pro Pro Gly Thr Gly Lys Thr Leu Leu Ala Lys Ala
 225 230 235
 gta gcg aac cag act tca gcc act ttc ttg cga gtg gtt ggc tca gag 770
 Val Ala Asn Gln Thr Ser Ala Thr Phe Leu Arg Val Val Gly Ser Glu
 240 245 250
 ctt atc cag aag tac cta ggt gac ggg ccc aaa ctt gtc cgg gag ctc 818
 Leu Ile Gln Lys Tyr Leu Gly Asp Gly Pro Lys Leu Val Arg Glu Leu
 255 260 265 270
 ttc cgg gtc gct gag gag cat gca ccg tcc atc gtg ttc att gat gag 866
 Phe Arg Val Ala Glu Glu His Ala Pro Ser Ile Val Phe Ile Asp Glu
 275 280 285
 atc gac gcc att ggg acc aaa aga tat gat tca aat tct gga ggt gag 914
 Ile Asp Ala Ile Gly Thr Lys Arg Tyr Asp Ser Asn Ser Gly Gly Glu
 290 295 300
 aga gaa att cag cga aca atg ttg gaa ctg ttg aac cag ttg gat gga 962
 Arg Glu Ile Gln Arg Thr Met Leu Glu Leu Leu Asn Gln Leu Asp Gly
 305 310 315
 ttt gat tcg agg gga gat gta aaa gtt atc atg gcc aca aac cga ata 1010
 Phe Asp Ser Arg Gly Asp Val Lys Val Ile Met Ala Thr Asn Arg Ile
 320 325 330

gaa act ttg gat cca gca ctt atc agg cca ggc cgc att gac aga aag 1058
 Glu Thr Leu Asp Pro Ala Leu Ile Arg Pro Gly Arg Ile Asp Arg Lys
 335 340 345 350
 atc gag ttc ccc ctg ccg gat gag aag acc aag aag cgt atc ttc cag 1106
 Ile Glu Phe Pro Leu Pro Asp Glu Lys Thr Lys Lys Arg Ile Phe Gln
 355 360 365
 att cac acc agc agg atg aca ctg gct gat gat gta acc ttg gat gac 1154
 Ile His Thr Ser Arg Met Thr Leu Ala Asp Asp Val Thr Leu Asp Asp
 370 375 380
 ttg atc atg gca aag gat gac ctc tct ggg gcc gac atc aag gca atc 1202
 Leu Ile Met Ala Lys Asp Asp Leu Ser Gly Ala Asp Ile Lys Ala Ile
 385 390 395
 tgt aca gaa gct ggc ttg atg gcc ttg cgg gaa cgc aga atg aaa gta 1250
 Cys Thr Glu Ala Gly Leu Met Ala Leu Arg Glu Arg Arg Met Lys Val
 400 405 410
 aca aat gaa gac ttc aaa aaa tct aaa gag aat gtt ctt tat aaa aaa 1298
 Thr Asn Glu Asp Phe Lys Lys Ser Lys Glu Asn Val Leu Tyr Lys Lys
 415 420 425 430
 caa gaa ggc acc cct gag ggg ctc tat ctc tag tggccacag tcgtcctcag 1351
 Gln Glu Gly Thr Pro Glu Gly Leu Tyr Leu
 435 440
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<210> 508

<211> 440

<212> PRT

<213> Mus musculus

<400> 508

Met Gly Gln Ser Gln Ser Gly Gly His Gly Pro Gly Gly Gly Lys Lys
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 Val Gly Lys Lys Lys Lys Lys Thr Lys Gly Pro Asp Ala Ala Ser Lys
 35 40 45
 Leu Pro Leu Val Thr Pro His Thr Gln Cys Arg Leu Lys Leu Leu Lys
 50 55 60
 Leu Glu Arg Ile Lys Asp Tyr Leu Leu Met Glu Glu Glu Phe Ile Arg
 65 70 75 80
 Asn Gln Glu Gln Met Lys Pro Leu Glu Glu Lys Gln Glu Glu Glu Arg
 85 90 95
 Ser Lys Val Asp Asp Leu Arg Gly Thr Pro Met Ser Val Gly Thr Leu
 100 105 110
 Glu Glu Ile Ile Asp Asp Asn His Ala Ile Val Ser Thr Ser Val Gly
 115 120 125
 Ser Glu His Tyr Val Ser Ile Leu Ser Phe Val Asp Lys Asp Leu Leu
 130 135 140
 Glu Pro Gly Cys Ser Val Leu Leu Asn His Lys Val His Ala Val Ile
 145 150 155 160
 Gly Val Leu Met Asp Asp Thr Asp Pro Leu Val Thr Val Met Lys Val
 165 170 175
 Glu Lys Ala Pro Gln Glu Thr Tyr Ala Asp Ile Gly Gly Leu Asp Asn
 180 185 190
 Gln Ile Gln Glu Ile Lys Glu Ser Val Glu Leu Pro Leu Thr His Pro
 195 200 205
 Glu Tyr Tyr Glu Glu Met Gly Ile Lys Pro Pro Lys Gly Val Ile Leu

210	215	220
Tyr Gly Pro Pro Gly Thr Gly Lys Thr Leu Leu Ala Lys Ala Val Ala		
225	230	235
Asn Gln Thr Ser Ala Thr Phe Leu Arg Val Val Gly Ser Glu Leu Ile		240
	245	250
Gln Lys Tyr Leu Gly Asp Gly Pro Lys Leu Val Arg Glu Leu Phe Arg		255
	260	265
Val Ala Glu Glu His Ala Pro Ser Ile Val Phe Ile Asp Glu Ile Asp		270
	275	280
Ala Ile Gly Thr Lys Arg Tyr Asp Ser Asn Ser Gly Gly Glu Arg Glu		285
	290	295
Ile Gln Arg Thr Met Leu Glu Leu Leu Asn Gln Leu Asp Gly Phe Asp		300
305	310	315
Ser Arg Gly Asp Val Lys Val Ile Met Ala Thr Asn Arg Ile Glu Thr		320
	325	330
Leu Asp Pro Ala Leu Ile Arg Pro Gly Arg Ile Asp Arg Lys Ile Glu		335
	340	345
Phe Pro Leu Pro Asp Glu Lys Thr Lys Lys Arg Ile Phe Gln Ile His		350
	355	360
Thr Ser Arg Met Thr Leu Ala Asp Asp Val Thr Leu Asp Asp Leu Ile		365
	370	375
Met Ala Lys Asp Asp Leu Ser Gly Ala Asp Ile Lys Ala Ile Cys Thr		380
385	390	395
Glu Ala Gly Leu Met Ala Leu Arg Glu Arg Arg Met Lys Val Thr Asn		400
	405	410
Glu Asp Phe Lys Lys Ser Lys Glu Asn Val Leu Tyr Lys Lys Gln Glu		415
	420	425
Gly Thr Pro Glu Gly Leu Tyr Leu		430
	435	440

<210> 509

<211> 1381

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (176).. (730)

<400> 509

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 cttcaagtgc ttgacaacgc accccittat cagggtatca gagcatcgcc acaga atg 178

Met

1

aag ctg gtt tcc atc acc ctg atg tta ttg ggt tca ctc gct ttc cta 226
 Lys Leu Val Ser Ile Thr Leu Met Leu Leu Gly Ser Leu Ala Phe Leu

5

10

15

ggc gcg gac act gca ggg cca gat act cct tcg cag ttc cga aag aag 274
 Gly Ala Asp Thr Ala Gly Pro Asp Thr Pro Ser Gln Phe Arg Lys Lys

20

25

30

tgg aat aag tgg gcg cta agt cgt ggg aag agg gaa cta caa gca tcc 322
 Trp Asn Lys Trp Ala Leu Ser Arg Gly Lys Arg Glu Leu Gln Ala Ser

35

40

45

agc agc tac cct acg gga ctc gct gat gag acg aca gtt cct acc cag 370
 Ser Ser Tyr Pro Thr Gly Leu Ala Asp Glu Thr Thr Val Pro Thr Gln

50

55

60

65

act ctt gat cca ttc ctg gac gag cag aac aca act ggc ccc cta caa 418

Thr Leu Asp Pro Phe Leu Asp Glu Gln Asn Thr Thr Gly Pro Leu Gln
 70 75 80
 gcc agc aat cag agc gaa gcc cac att cgt gtc aaa cgc tac cgc cag 466
 Ala Ser Asn Gln Ser Glu Ala His Ile Arg Val Lys Arg Tyr Arg Gln
 85 90 95
 agc atg aac cag ggt tcc cgc agc aat gga tgc cgc ttc ggg acc tgc 514
 Ser Met Asn Gln Gly Ser Arg Ser Asn Gly Cys Arg Phe Gly Thr Cys
 100 105 110
 aca ttt cag aaa ttg gcc cac cag atc tac cag cta aca gac aaa gac 562
 Thr Phe Gln Lys Leu Ala His Gln Ile Tyr Gln Leu Thr Asp Lys Asp
 115 120 125
 aag gac ggc atg gct ccc aga aac aag atc agc cct caa ggc tat ggc 610
 Lys Asp Gly Met Ala Pro Arg Asn Lys Ile Ser Pro Gln Gly Tyr Gly
 130 135 140 145
 cgc cgg cgc cgg cgt tcc ctg ctg gag gtc ctc cgg tcc cgg act gtg 658
 Arg Arg Arg Arg Arg Ser Leu Leu Glu Val Leu Arg Ser Arg Thr Val
 150 155 160
 gag tcc tcc cag gag cag aca cac aca gcc cca ggc ccc tgg gcg cac 706
 Glu Ser Ser Gln Glu Gln Thr His Thr Ala Pro Gly Pro Trp Ala His
 165 170 175
 atc tcc aga ctc ttt agg ata tag gtgcgggtga cagcattgaa cagtcgggcg 760
 Ile Ser Arg Leu Phe Arg Ile
 180 185
 agtatccggt tggcgctgc ggaatcagag aacttcgcac cggggcggac tgagacaatc 820
 ctgcagagat ctgcctggct gcccctaggg gaggcagagg aaccaagac caagccaggc 880
 tcatgccaga aaccgagact tacaggctga tactctccgg gcaggggtct gagccactgc 940
 cttgcccgct cataaactgg tttctcacgg ggcataagcc tcattactac ttgaactttc 1000
 caaacctag cgaggaacgt gcaatgcttg ttgtccagcc aaaggtaact atagtattta 1060
 agtttggtgc tgtcaagggt ttttttttg taacttcaaa tatatagaga tatttttgta 1120

cgttatataat tgtattaagg gcattttaaa gtgattatat tgtcaccttc ccctatttta 1180
 agacgtgaat gictagcaa ggtgtaagg tgtttggttc cgigtgtgtg tgtgtgtgtg 1240
 tgtgtgtgtg tgtgtgtgtg taaggaggag agcgctgat tatcgccgtg ggatgaagaa 1300
 aaaacattgt gtttcctata atctatttac ataaaatatg tgatctggga aaaagcaaac 1360
 caataaactg tctcaatgct g 1381

<210> 510

<211> 184

<212> PRT

<213> Mus musculus

<400> 510

Met Lys Leu Val Ser Ile Thr Leu Met Leu Leu Gly Ser Leu Ala Phe
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 Leu Gly Ala Asp Thr Ala Gly Pro Asp Thr Pro Ser Gln Phe Arg Lys
 20 25 30
 Lys Trp Asn Lys Trp Ala Leu Ser Arg Gly Lys Arg Glu Leu Gln Ala
 35 40 45
 Ser Ser Ser Tyr Pro Thr Gly Leu Ala Asp Glu Thr Thr Val Pro Thr
 50 55 60
 Gln Thr Leu Asp Pro Phe Leu Asp Glu Gln Asn Thr Thr Gly Pro Leu
 65 70 75 80
 Gln Ala Ser Asn Gln Ser Glu Ala His Ile Arg Val Lys Arg Tyr Arg
 85 90 95
 Gln Ser Met Asn Gln Gly Ser Arg Ser Asn Gly Cys Arg Phe Gly Thr
 100 105 110
 Cys Thr Phe Gln Lys Leu Ala His Gln Ile Tyr Gln Leu Thr Asp Lys
 115 120 125
 Asp Lys Asp Gly Met Ala Pro Arg Asn Lys Ile Ser Pro Gln Gly Tyr

130 135 140
 Gly Arg Arg Arg Arg Arg Ser Leu Leu Glu Val Leu Arg Ser Arg Thr
 145 150 155 160
 Val Glu Ser Ser Gln Glu Gln Thr His Thr Ala Pro Gly Pro Trp Ala
 165 170 175
 His Ile Ser Arg Leu Phe Arg Ile
 180

<210> 511

<211> 1629

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (86).. (1615)

<400> 511

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 Met Ala Asp Arg Ala Ala Leu Glu Glu
 1 5
 ctg gta cga ctc cag gga gcg cat gtg agg ggc ctt aag gag cag aaa 160
 Leu Val Arg Leu Gln Gly Ala His Val Arg Gly Leu Lys Glu Gln Lys
 10 15 20 25
 gcg tcc gct gag cag atc gag gag gag gtg acg aaa ctc cta aaa ctg 208
 Ala Ser Ala Glu Gln Ile Glu Glu Glu Val Thr Lys Leu Leu Lys Leu
 30 35 40
 aag gca cag ctg ggc cag gat gaa ggc aaa cag aag ttt gtg ctc aaa 256

Lys Ala Gln Leu Gly Gln Asp Glu Gly Lys Gln Lys Phe Val Leu Lys
 45 50 55
 acc ccc aag ggc acg aga gac tat agt ccc cgg cag atg gcg gtc cgg 304
 Thr Pro Lys Gly Thr Arg Asp Tyr Ser Pro Arg Gln Met Ala Val Arg
 60 65 70
 gaa aag gtg ttt gat gtc atc atc cgc tgt ttc aaa cgc cat gga gca 352
 Glu Lys Val Phe Asp Val Ile Ile Arg Cys Phe Lys Arg His Gly Ala
 75 80 85
 gaa gtg att gat aca cct gtg ttt gaa cta aag gaa aca ctg act gga 400
 Glu Val Ile Asp Thr Pro Val Phe Glu Leu Lys Glu Thr Leu Thr Gly
 90 95 100 105
 aag tac gga gaa gac tca aag ctt atc tat gac ttg aag gac cag ggt 448
 Lys Tyr Gly Glu Asp Ser Lys Leu Ile Tyr Asp Leu Lys Asp Gln Gly
 110 115 120
 ggg gag ctg ctg tcc ctc cgt tat gac ctt act gtc cct ttt gct cgc 496
 Gly Glu Leu Leu Ser Leu Arg Tyr Asp Leu Thr Val Pro Phe Ala Arg
 125 130 135
 tat ctg gca atg aat aaa ctg acc aac att aaa cgc tac cat ata gca 544
 Tyr Leu Ala Met Asn Lys Leu Thr Asn Ile Lys Arg Tyr His Ile Ala
 140 145 150
 aag gtg tat cgc cgg gac aac cca gct atg acc cga ggc cgt tac cgt 592
 Lys Val Tyr Arg Arg Asp Asn Pro Ala Met Thr Arg Gly Arg Tyr Arg
 155 160 165
 gaa ttc tat caa tgc gat ttt gac att gcc gga cag ttc gac ccc atg 640
 Glu Phe Tyr Gln Cys Asp Phe Asp Ile Ala Gly Gln Phe Asp Pro Met
 170 175 180 185
 att cct gat gca gag tgc cta aag att atg tgc gag atc ctg agt tca 688
 Ile Pro Asp Ala Glu Cys Leu Lys Ile Met Cys Glu Ile Leu Ser Ser
 190 195 200

ctt cag atc ggc aac ttc ctg gtc aag gta aac gac agg cgc atc cta 736
 Leu Gln Ile Gly Asn Phe Leu Val Lys Val Asn Asp Arg Arg Ile Leu
 205 210 215
 gat ggg atg ttt gct gtc tgt ggt gtt cct gat agc aag ttc cgt acc 784
 Asp Gly Met Phe Ala Val Cys Gly Val Pro Asp Ser Lys Phe Arg Thr
 220 225 230
 atc tgc tcc tcg gtg gac aag cta gac aag gtt tcc tgg gag gaa gtg 832
 Ile Cys Ser Ser Val Asp Lys Leu Asp Lys Val Ser Trp Glu Glu Val
 235 240 245
 aag aat gag atg gtg gga gag aag ggc ctt gca ccg gaa gtg gct gat 880
 Lys Asn Glu Met Val Gly Glu Lys Gly Leu Ala Pro Glu Val Ala Asp
 250 255 260 265
 cgc atc ggg gac tat gtc cag cag cat ggt ggg gtt tct ctg gtg gag 928
 Arg Ile Gly Asp Tyr Val Gln Gln His Gly Gly Val Ser Leu Val Glu
 270 275 280
 cag tta ctg cag gat cct aaa ctc tcc caa aac aaa cag gct gta gag 976
 Gln Leu Leu Gln Asp Pro Lys Leu Ser Gln Asn Lys Gln Ala Val Glu
 285 290 295
 ggc ttg gga gac cta aag ctg ctc ttt gag tat cta atc ctg ttt ggc 1024
 Gly Leu Gly Asp Leu Lys Leu Leu Phe Glu Tyr Leu Ile Leu Phe Gly
 300 305 310
 att gat gac aag atc tcc ttt gac ctg agc ctt gct cgg ggg cta gac 1072
 Ile Asp Asp Lys Ile Ser Phe Asp Leu Ser Leu Ala Arg Gly Leu Asp
 315 320 325
 tac tat act ggg gtc atc tat gag gca gtg ctg cta cag atg cca acc 1120
 Tyr Tyr Thr Gly Val Ile Tyr Glu Ala Val Leu Leu Gln Met Pro Thr
 330 335 340 345
 caa gct ggg gaa gag ccc ctg ggt gtg ggc agc ata gct gct gga ggg 1168
 Gln Ala Gly Glu Glu Pro Leu Gly Val Gly Ser Ile Ala Ala Gly Gly

350	355	360	
cgc tac gat ggc ctg gtt ggc atg ttt gac ccc aag ggg cgc aag gtg			1216
Arg Tyr Asp Gly Leu Val Gly Met Phe Asp Pro Lys Gly Arg Lys Val			
365	370	375	
cca tgc gtt ggg ctc agt att gga gtg gag cgg atc ttt tcc att gta			1264
Pro Cys Val Gly Leu Ser Ile Gly Val Glu Arg Ile Phe Ser Ile Val			
380	385	390	
gag caa aga tta gag gct tca gag gaa aag gta cgg acc aca gag acg			1312
Glu Gln Arg Leu Glu Ala Ser Glu Glu Lys Val Arg Thr Thr Glu Thr			
395	400	405	
cag gtg ctt gtg gca tct gca cag aag aag ctg ctg gag gag aga ctg			1360
Gln Val Leu Val Ala Ser Ala Gln Lys Lys Leu Leu Glu Glu Arg Leu			
410	415	420	425
aag ctt gtc tca gag tta tgg gat gct ggg atc aag gct gag ctg ctg			1408
Lys Leu Val Ser Glu Leu Trp Asp Ala Gly Ile Lys Ala Glu Leu Leu			
430	435	440	
tac aag aag aac ccg aag tta cta aac cag ttg cag tac tgt gag gag			1456
Tyr Lys Lys Asn Pro Lys Leu Leu Asn Gln Leu Gln Tyr Cys Glu Glu			
445	450	455	
gca ggc atc cca ctg gtg gcc atc att ggt gag cag gaa ctc aag gat			1504
Ala Gly Ile Pro Leu Val Ala Ile Ile Gly Glu Gln Glu Leu Lys Asp			
460	465	470	
ggc gtc atc aag ctc cgc tgc gtg gcc agc aga gag gag gtg gat gtc			1552
Gly Val Ile Lys Leu Arg Ser Val Ala Ser Arg Glu Glu Val Asp Val			
475	480	485	
caa aga gaa gac ctt gtg gag gaa atc aga aga aga aca aat cag ccc			1600
Gln Arg Glu Asp Leu Val Glu Glu Ile Arg Arg Arg Thr Asn Gln Pro			
490	495	500	505
ctc tcc atc tgc tga acigaacaaa ctat			1629

Leu Ser Ile Cys

510

<210> 512

<211> 509

<212> PRT

<213> Mus musculus

<400> 512

Met Ala Asp Arg Ala Ala Leu Glu Glu Leu Val Arg Leu Gln Gly Ala
 1 5 10 15
 His Val Arg Gly Leu Lys Glu Gln Lys Ala Ser Ala Glu Gln Ile Glu
 20 25 30
 Glu Glu Val Thr Lys Leu Leu Lys Leu Lys Ala Gln Leu Gly Gln Asp
 35 40 45
 Glu Gly Lys Gln Lys Phe Val Leu Lys Thr Pro Lys Gly Thr Arg Asp
 50 55 60
 Tyr Ser Pro Arg Gln Met Ala Val Arg Glu Lys Val Phe Asp Val Ile
 65 70 75 80
 Ile Arg Cys Phe Lys Arg His Gly Ala Glu Val Ile Asp Thr Pro Val
 85 90 95
 Phe Glu Leu Lys Glu Thr Leu Thr Gly Lys Tyr Gly Glu Asp Ser Lys
 100 105 110
 Leu Ile Tyr Asp Leu Lys Asp Gln Gly Gly Glu Leu Leu Ser Leu Arg
 115 120 125
 Tyr Asp Leu Thr Val Pro Phe Ala Arg Tyr Leu Ala Met Asn Lys Leu
 130 135 140
 Thr Asn Ile Lys Arg Tyr His Ile Ala Lys Val Tyr Arg Arg Asp Asn
 145 150 155 160

Pro Ala Met Thr Arg Gly Arg Tyr Arg Glu Phe Tyr Gln Cys Asp Phe
 165 170 175
 Asp Ile Ala Gly Gln Phe Asp Pro Met Ile Pro Asp Ala Glu Cys Leu
 180 185 190
 Lys Ile Met Cys Glu Ile Leu Ser Ser Leu Gln Ile Gly Asn Phe Leu
 195 200 205
 Val Lys Val Asn Asp Arg Arg Ile Leu Asp Gly Met Phe Ala Val Cys
 210 215 220
 Gly Val Pro Asp Ser Lys Phe Arg Thr Ile Cys Ser Ser Val Asp Lys
 225 230 235 240
 Leu Asp Lys Val Ser Trp Glu Glu Val Lys Asn Glu Met Val Gly Glu
 245 250 255
 Lys Gly Leu Ala Pro Glu Val Ala Asp Arg Ile Gly Asp Tyr Val Gln
 260 265 270
 Gln His Gly Gly Val Ser Leu Val Glu Gln Leu Leu Gln Asp Pro Lys
 275 280 285
 Leu Ser Gln Asn Lys Gln Ala Val Glu Gly Leu Gly Asp Leu Lys Leu
 290 295 300
 Leu Phe Glu Tyr Leu Ile Leu Phe Gly Ile Asp Asp Lys Ile Ser Phe
 305 310 315 320
 Asp Leu Ser Leu Ala Arg Gly Leu Asp Tyr Tyr Thr Gly Val Ile Tyr
 325 330 335
 Glu Ala Val Leu Leu Gln Met Pro Thr Gln Ala Gly Glu Glu Pro Leu
 340 345 350
 Gly Val Gly Ser Ile Ala Ala Gly Gly Arg Tyr Asp Gly Leu Val Gly
 355 360 365
 Met Phe Asp Pro Lys Gly Arg Lys Val Pro Cys Val Gly Leu Ser Ile
 370 375 380
 Gly Val Glu Arg Ile Phe Ser Ile Val Glu Gln Arg Leu Glu Ala Ser

385 390 395 400
 Glu Glu Lys Val Arg Thr Thr Glu Thr Gln Val Leu Val Ala Ser Ala
 405 410 415
 Gln Lys Lys Leu Leu Glu Glu Arg Leu Lys Leu Val Ser Glu Leu Trp
 420 425 430
 Asp Ala Gly Ile Lys Ala Glu Leu Leu Tyr Lys Lys Asn Pro Lys Leu
 435 440 445
 Leu Asn Gln Leu Gln Tyr Cys Glu Glu Ala Gly Ile Pro Leu Val Ala
 450 455 460
 Ile Ile Gly Glu Gln Glu Leu Lys Asp Gly Val Ile Lys Leu Arg Ser
 465 470 475 480
 Val Ala Ser Arg Glu Glu Val Asp Val Gln Arg Glu Asp Leu Val Glu
 485 490 495
 Glu Ile Arg Arg Arg Thr Asn Gln Pro Leu Ser Ile Cys
 500 505

<210> 513

<211> 1360

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (91).. (945)

<400> 513

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 gagtttttga gcgactctga ctccagcact atg tct gac aaa cgg cag tcc agc 114
 Met Ser Asp Lys Arg Gln Ser Ser

	1	5	
cat gtc cag tct cag cgg atc cct gag tcc ttc aga gaa aat tcc aag	162		
His Val Gln Ser Gln Arg Ile Pro Glu Ser Phe Arg Glu Asn Ser Lys			
10	15	20	
aca gaa ctg gga gct tgt gga tgg att ttg gtg gct gtc tgc ttc atc	210		
Thr Glu Leu Gly Ala Cys Gly Trp Ile Leu Val Ala Val Ser Phe Ile			
25	30	35	40
ttc gtg ctt ata act ttc cca ata tca att tgg att tgc ata aag att	258		
Phe Val Leu Ile Thr Phe Pro Ile Ser Ile Trp Ile Cys Ile Lys Ile			
45	50	55	
gtg aag gag tat gaa aga gtg atc atc ttc aga ctg ggc cgc att ttg	306		
Val Lys Glu Tyr Glu Arg Val Ile Ile Phe Arg Leu Gly Arg Ile Leu			
60	65	70	
caa ggt ggc gcc aaa gga cct ggg ttg ttt ttc atc ctg ccg tgc act	354		
Gln Gly Gly Ala Lys Gly Pro Gly Leu Phe Phe Ile Leu Pro Cys Thr			
75	80	85	
gac agc ttc atc aag gtg gac atg agg acc atc tcc ttc gat att ccc	402		
Asp Ser Phe Ile Lys Val Asp Met Arg Thr Ile Ser Phe Asp Ile Pro			
90	95	100	
cca cag gag gtg ctc act aag gac tgc gtg acc atc agc gtg gat ggt	450		
Pro Gln Glu Val Leu Thr Lys Asp Ser Val Thr Ile Ser Val Asp Gly			
105	110	115	120
gtg gtc tat tac cgt gtt cag aac gca acc ctg gct gtg gca aat atc	498		
Val Val Tyr Tyr Arg Val Gln Asn Ala Thr Leu Ala Val Ala Asn Ile			
125	130	135	
acc aat gca gat tgc gca acc cgt ctt ttg gcg caa act acc ctc agg	546		
Thr Asn Ala Asp Ser Ala Thr Arg Leu Leu Ala Gln Thr Thr Leu Arg			
140	145	150	
aat gcg ctg ggc acc aag aac ctg tct cag atc ctc tct gac aga gaa	594		

Asn Ala Leu Gly Thr Lys Asn Leu Ser Gln Ile Leu Ser Asp Arg Glu
 155 160 165
 gag atc gca cac cac atg cag agt acg ctg gat gac gcc aca gat gac 642
 Glu Ile Ala His His Met Gln Ser Thr Leu Asp Asp Ala Thr Asp Asp
 170 175 180
 tgg gga ata aag gtc gag cgt gtg gag att aag gac gtg aag ctg cca 690
 Trp Gly Ile Lys Val Glu Arg Val Glu Ile Lys Asp Val Lys Leu Pro
 185 190 195 200
 gta cag ctc cag aga gcc atg gct gca gag gca gaa gcc gcc cgg gag 738
 Val Gln Leu Gln Arg Ala Met Ala Ala Glu Ala Glu Ala Ala Arg Glu
 205 210 215
 gct aga gcc aag gtg att gca gcc gaa ggg gaa atg aat gca tcc agg 786
 Ala Arg Ala Lys Val Ile Ala Ala Glu Gly Glu Met Asn Ala Ser Arg
 220 225 230
 gct ctg aaa gaa gca tcc atg gtt atc acg gag tct cct gct gcc ctt 834
 Ala Leu Lys Glu Ala Ser Met Val Ile Thr Glu Ser Pro Ala Ala Leu
 235 240 245
 cag ctc cgg tac ctt caa acc ctg acc act atc gct gcg gag aaa aac 882
 Gln Leu Arg Tyr Leu Gln Thr Leu Thr Thr Ile Ala Ala Glu Lys Asn
 250 255 260
 tcc acc att gtc ttc cct ctg ccc atc gac atg ttg cag ggc atc atg 930
 Ser Thr Ile Val Phe Pro Leu Pro Ile Asp Met Leu Gln Gly Ile Met
 265 270 275 280
 ggt tcc cac cac tga gcagtcacgc tctatgggag agctgtcgtg agtccttccc 985
 Gly Ser His His
 285
 agggtaaaga ggggacaaag ttagccttia actctcgggg agattagctg aaagcttgac 1045
 tgtccccctc cctctccttt cctglatgtg cactgtaggg gctcttagaa tgggcaggga 1105
 tcataaaagc agatgaagag actcgctctg gagccaggag tgcagctcag ttgcagagca 1165

ctggcttagc ccgttcaagg ctcagggctt catcctcagc accaacaat aaacaaatag 1225
gcaagtcagg gaaggacgcg tctgagccca ggtaaact ctgtgacact gaagaactgt 1285
gccaccact tctctggctg cctgtgcctt cccctcaggg gatccttagg atcgttttgt 1345
tttgttttga gaatt 1360

<210> 514

<211> 284

<212> PRT

<213> Mus musculus

<400> 514

Met Ser Asp Lys Arg Gln Ser Ser His Val Gln Ser Gln Arg Ile Pro
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Glu Ser Phe Arg Glu Asn Ser Lys Thr Glu Leu Gly Ala Cys Gly Trp
20 25 30
Ile Leu Val Ala Val Ser Phe Ile Phe Val Leu Ile Thr Phe Pro Ile
35 40 45
Ser Ile Trp Ile Cys Ile Lys Ile Val Lys Glu Tyr Glu Arg Val Ile
50 55 60
Ile Phe Arg Leu Gly Arg Ile Leu Gln Gly Gly Ala Lys Gly Pro Gly
65 70 75 80
Leu Phe Phe Ile Leu Pro Cys Thr Asp Ser Phe Ile Lys Val Asp Met
85 90 95
Arg Thr Ile Ser Phe Asp Ile Pro Pro Gln Glu Val Leu Thr Lys Asp
100 105 110
Ser Val Thr Ile Ser Val Asp Gly Val Val Tyr Tyr Arg Val Gln Asn
115 120 125
Ala Thr Leu Ala Val Ala Asn Ile Thr Asn Ala Asp Ser Ala Thr Arg
130 135 140

Leu Leu Ala Gln Thr Thr Leu Arg Asn Ala Leu Gly Thr Lys Asn Leu
 145 150 155 160
 Ser Gln Ile Leu Ser Asp Arg Glu Glu Ile Ala His His Met Gln Ser
 165 170 175
 Thr Leu Asp Asp Ala Thr Asp Asp Trp Gly Ile Lys Val Glu Arg Val
 180 185 190
 Glu Ile Lys Asp Val Lys Leu Pro Val Gln Leu Gln Arg Ala Met Ala
 195 200 205
 Ala Glu Ala Glu Ala Ala Arg Glu Ala Arg Ala Lys Val Ile Ala Ala
 210 215 220
 Glu Gly Glu Met Asn Ala Ser Arg Ala Leu Lys Glu Ala Ser Met Val
 225 230 235 240
 Ile Thr Glu Ser Pro Ala Ala Leu Gln Leu Arg Tyr Leu Gln Thr Leu
 245 250 255
 Thr Thr Ile Ala Ala Glu Lys Asn Ser Thr Ile Val Phe Pro Leu Pro
 260 265 270
 Ile Asp Met Leu Gln Gly Ile Met Gly Ser His His
 275 280

<210> 515

<211> 3223

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (174).. (2393)

<400> 515

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 acagtgagaa gcatgctttc cactgctctc cctgggtccca gttgccaccc agg atg : 176
 Met
 1
 tct gtg agt gag agt gcg gta ttt gcc tac gag tcc tct gtg cat agc 224
 Ser Val Ser Glu Ser Ala Val Phe Ala Tyr Glu Ser Ser Val His Ser
 5 10 15
 acc aac gtc ttg ctc agc ctc aat gac cag cgg aag aag gat gtc ctg 272
 Thr Asn Val Leu Leu Ser Leu Asn Asp Gln Arg Lys Lys Asp Val Leu
 20 25 30
 tgt gat gtg act gtc ctg gtg gag ggc cag cgg ttc cga gcc cac cgc 320
 Cys Asp Val Thr Val Leu Val Glu Gly Gln Arg Phe Arg Ala His Arg
 35 40 45
 tcg gtg ctg gct gcg tgc agc agc tac ttc cac tcg aga atc gta ggc 368
 Ser Val Leu Ala Ala Cys Ser Ser Tyr Phe His Ser Arg Ile Val Gly
 50 55 60 65
 cag act gac gca gag ctc acc gtc aca ctg cct gaa gag gta acg gtt 416
 Gln Thr Asp Ala Glu Leu Thr Val Thr Leu Pro Glu Glu Val Thr Val
 70 75 80
 aaa gga ttt gaa cct tta att cag ttt gcc tac act gcc aaa ctc att 464
 Lys Gly Phe Glu Pro Leu Ile Gln Phe Ala Tyr Thr Ala Lys Leu Ile
 85 90 95
 tta agt aaa gac aat gtt gac gaa gtg tgc agg tgt gtg gag ttt cta 512
 Leu Ser Lys Asp Asn Val Asp Glu Val Cys Arg Cys Val Glu Phe Leu
 100 105 110
 agc gta cac aat atc gag gaa tcc tgc ttc cag ttt ctc aag ttt aag 560
 Ser Val His Asn Ile Glu Glu Ser Cys Phe Gln Phe Leu Lys Phe Lys
 115 120 125

ttt ttg gac tcc act tca gag cag cag gaa tgc gca aga aaa aaa tgc	608
Phe Leu Asp Ser Thr Ser Glu Gln Gln Glu Cys Ala Arg Lys Lys Cys	
130 135 140 145	
ttc tcc tca cac tgt cag aaa gca gat ttt aaa ttt tca ttt tca gaa	656
Phe Ser Ser His Cys Gln Lys Ala Asp Phe Lys Phe Ser Phe Ser Glu	
150 155 160	
cag aaa gat ctc gaa atc gat gaa gca gat gaa ttc ttg gaa aag aaa	704
Gln Lys Asp Leu Glu Ile Asp Glu Ala Asp Glu Phe Leu Glu Lys Lys	
165 170 175	
cgt gtt cag acg cct cag tgt gac tcc cgc agg tgt cag ggc agt gta	752
Arg Val Gln Thr Pro Gln Cys Asp Ser Arg Arg Cys Gln Gly Ser Val	
180 185 190	
aaa gca tcc ccc cct ctc cag gac agt gtc agt cag gcg tgc cag tcc	800
Lys Ala Ser Pro Pro Leu Gln Asp Ser Val Ser Gln Ala Cys Gln Ser	
195 200 205	
ctg tgc acg gac aag gat gga gcc ctg gca ttg cca tct cta tgc ccc	848
Leu Cys Thr Asp Lys Asp Gly Ala Leu Ala Leu Pro Ser Leu Cys Pro	
210 215 220 225	
aaa tac aga aag ttc cag aaa gcg ttt gga act gac aag atc cga act	896
Lys Tyr Arg Lys Phe Gln Lys Ala Phe Gly Thr Asp Lys Ile Arg Thr	
230 235 240	
cta gaa tcc ggt gtc aga gat gtc cac act gcc tct gtc cag cca aat	944
Leu Glu Ser Gly Val Arg Asp Val His Thr Ala Ser Val Gln Pro Asn	
245 250 255	
gag acc tct gaa ctt gag tgt ttt ggg gga gcg cag ggc tgt gca gat	992
Glu Thr Ser Glu Leu Glu Cys Phe Gly Gly Ala Gln Gly Cys Ala Asp	
260 265 270	
tta cac gtg att tta aaa tgt gaa gga atg aag gca gcc atg gag agt	1040
Leu His Val Ile Leu Lys Cys Glu Gly Met Lys Ala Ala Met Glu Ser	

275	280	285	
gaa gac aca gag ggc cag gat ccc tcc cct cag tgc cct gca gag cag			1088
Glu Asp Thr Glu Gly Gln Asp Pro Ser Pro Gln Cys Pro Ala Glu Gln			
290	295	300	305
ccc caa ggg aca ccc ttg cct cag gat tct gca gga cct cac ggg ctc			1136
Pro Gln Gly Thr Pro Leu Pro Gln Asp Ser Ala Gly Pro His Gly Leu			
310	315	320	
tac tcc ttg tca gcc tta cac aca tat gag cag tca ggt gac gtg gcc			1184
Tyr Ser Leu Ser Ala Leu His Thr Tyr Glu Gln Ser Gly Asp Val Ala			
325	330	335	
ttt gct ggg gtg cag agt aaa acc gtg aag aca gaa aag cct ctg tgc			1232
Phe Ala Gly Val Gln Ser Lys Thr Val Lys Thr Glu Lys Pro Leu Ser			
340	345	350	
agg cca gat gcc cag gac gag aag cca tcg gaa aat cag gat tta tat			1280
Arg Pro Asp Ala Gln Asp Glu Lys Pro Ser Glu Asn Gln Asp Leu Tyr			
355	360	365	
ctg aag tct agc atg ggc cct aaa gaa gac agc agc agc ctt gca tct			1328
Leu Lys Ser Ser Met Gly Pro Lys Glu Asp Ser Ser Ser Leu Ala Ser			
370	375	380	385
gag gat cgg agt agt gtg gag cga gag gtg gca gag cac ctg gcc aaa			1376
Glu Asp Arg Ser Ser Val Glu Arg Glu Val Ala Glu His Leu Ala Lys			
390	395	400	
ggc ttc tgg agt gac att tgc agc acg gac tcg cct tgc caa atg cag			1424
Gly Phe Trp Ser Asp Ile Cys Ser Thr Asp Ser Pro Cys Gln Met Gln			
405	410	415	
ttg tcg ccc act gtg gcc aaa gac ggc cca gaa cag ggc tac tcg caa			1472
Leu Ser Pro Thr Val Ala Lys Asp Gly Pro Glu Gln Gly Tyr Ser Gln			
420	425	430	
agg cga tct gag tgt ccc tgg ttg ggt atc agg atc agt gag agc ccc			1520

Arg Arg Ser Glu Cys Pro Trp Leu Gly Ile Arg Ile Ser Glu Ser Pro
 435 440 445
 gag cca ggc cag cgg act ttc aca act ctc agt tcc gtc aac tgc cct 1568
 Glu Pro Gly Gln Arg Thr Phe Thr Thr Leu Ser Ser Val Asn Cys Pro
 450 455 460 465
 ttt atc agt act ctg agt tcc gaa ggc tgc tca agc aac ttg gaa att 1616
 Phe Ile Ser Thr Leu Ser Ser Glu Gly Cys Ser Ser Asn Leu Glu Ile
 470 475 480
 gga aac tac gat tat gtc tcg gag cct cag cag gag cct tgc ccg tat 1664
 Gly Asn Tyr Asp Tyr Val Ser Glu Pro Gln Gln Glu Pro Cys Pro Tyr
 485 490 495
 gct tgt gtg att agc ctg gga gat gac tct gag acg gac acg gaa ggt 1712
 Ala Cys Val Ile Ser Leu Gly Asp Asp Ser Glu Thr Asp Thr Glu Gly
 500 505 510
 gac agc gag tcc tgt tct gcc agg gag cag gac tgt gag gtg aag ctg 1760
 Asp Ser Glu Ser Cys Ser Ala Arg Glu Gln Asp Cys Glu Val Lys Leu
 515 520 525
 cca ttc aat gcc caa cgg ata att tcg ctc tca cga aat gat ttc caa 1808
 Pro Phe Asn Ala Gln Arg Ile Ile Ser Leu Ser Arg Asn Asp Phe Gln
 530 535 540 545
 tcc ttg ttg aaa atg cac aaa ctg acc cca gag cag ctc gac tgt atc 1856
 Ser Leu Leu Lys Met His Lys Leu Thr Pro Glu Gln Leu Asp Cys Ile
 550 555 560
 cat gac atc cgc aga agg agt aag aac aga atc gcc gcg caa cgc tgt 1904
 His Asp Ile Arg Arg Arg Ser Lys Asn Arg Ile Ala Ala Gln Arg Cys
 565 570 575
 cgc aag agg aaa ctt gac tgt atc cag aac ctt gag tcg gaa atc gag 1952
 Arg Lys Arg Lys Leu Asp Cys Ile Gln Asn Leu Glu Ser Glu Ile Glu
 580 585 590

aag ctg caa agt gaa aag gag agc ttg ctg aag gag cga gac cac att 2000
 Lys Leu Gln Ser Glu Lys Glu Ser Leu Leu Lys Glu Arg Asp His Ile
 595 600 605
 ctg tca acg ctg ggg gag aca aag cag aac ctg acc gga ctt tgt cag 2048
 Leu Ser Thr Leu Gly Glu Thr Lys Gln Asn Leu Thr Gly Leu Cys Gln
 610 615 620 625
 cag gtg tgc aag gaa gcc gcc ctg agc ccc gag cag atc cag atc ctt 2096
 Gln Val Cys Lys Glu Ala Ala Leu Ser Pro Glu Gln Ile Gln Ile Leu
 630 635 640
 gcc aag tac tcg gcc tcc gac tgc ccg ctt tcc ttt tta att tct gag 2144
 Ala Lys Tyr Ser Ala Ser Asp Cys Pro Leu Ser Phe Leu Ile Ser Glu
 645 650 655
 aaa gga aaa agt act ccc gac ggc gag ctt gct ttt aca tcg gtt ttc 2192
 Lys Gly Lys Ser Thr Pro Asp Gly Glu Leu Ala Phe Thr Ser Val Phe
 660 665 670
 agt gtg tct gac gtg cct cca act gca cca cct ccc tgt ggg cga ggg 2240
 Ser Val Ser Asp Val Pro Pro Thr Ala Pro Pro Pro Cys Gly Arg Gly
 675 680 685
 agc agc gcg gcc agc cag gag ctg gtg cag gag tcc ccg cca acc acc 2288
 Ser Ser Ala Ala Ser Gln Glu Leu Val Gln Glu Ser Pro Pro Thr Thr
 690 695 700 705
 gca gct gcc cca gag cag gcc acg ctg ttg gaa ccc tgt cgg cag agt 2336
 Ala Ala Ala Pro Glu Gln Ala Thr Leu Leu Glu Pro Cys Arg Gln Ser
 710 715 720
 gct ggg atc tca gac ttc tgt cag cag atg tct gac aag tgc act act 2384
 Ala Gly Ile Ser Asp Phe Cys Gln Gln Met Ser Asp Lys Cys Thr Thr
 725 730 735
 gac gag taa accccacggg cagccttcag cccatggcct ccctctgacc 2433
 Asp Glu

740

ttcggcattg tctcgaagcc tagcgtggcc gtgtcttctt gcttagcagt cctgtgtcct 2493
 cctggtagct tictgttgag ggaatttctc tttcaggtaga tccitgagttc tccttggttt 2553
 tcataggaga tgttctatct ctitgaatgat gggaaattgg atgtgaaaat atagaatgac 2613
 caggtaataa tctcctagag ttcaaactaa ctagagcagc ggaagccgca gcatccattt 2673
 caacagctcg gagcatctgc acgcagtcct cgtgggccgt ggataaccta ctgacagga 2733
 agaagagccc ttcciatgcg gagcagtggt gatctcccca gaagtggggt acttcttgtc 2793
 tatgtggaaa agaaatctcc tttgaactct aatgtcctgc acctcagctc cticaaagtc 2853
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 cctgagctgg aggcctctgc taccctcagt attgactagg agttttgact gcacaaacca 2973
 gaaagtgtat catcgttccc tgttctcagt tctgttctc tctttagtct ccaccttgtc 3033
 tagactgita ggaactttct gtcccgtaga ggaggagctg ccccgagag ctgcacactg 3093
 cacaaggctg tcatcatct cattgcaggt cgttgatgac catgagggca ttggagtcaa 3153
 tgagagggaa atgtctacaa tgacctgaag agcagctcat tggaatccca gtgaagactt 3213
 gtagtctgtt 3223

<210> 516

<211> 739

<212> PRT

<213> Mus musculus

<400> 516

Met Ser Val Ser Glu Ser Ala Val Phe Ala Tyr Glu Ser Ser Val His

1

5

10

15

Ser Thr Asn Val Leu Leu Ser Leu Asn Asp Gln Arg Lys Lys Asp Val

20

25

30

Leu Cys Asp Val Thr Val Leu Val Glu Gly Gln Arg Phe Arg Ala His

35

40

45

Arg Ser Val Leu Ala Ala Cys Ser Ser Tyr Phe His Ser Arg Ile Val

50 55 60
 Gly Gln Thr Asp Ala Glu Leu Thr Val Thr Leu Pro Glu Glu Val Thr
 65 70 75 80
 Val Lys Gly Phe Glu Pro Leu Ile Gln Phe Ala Tyr Thr Ala Lys Leu
 85 90 95
 Ile Leu Ser Lys Asp Asn Val Asp Glu Val Cys Arg Cys Val Glu Phe
 100 105 110
 Leu Ser Val His Asn Ile Glu Glu Ser Cys Phe Gln Phe Leu Lys Phe
 115 120 125
 Lys Phe Leu Asp Ser Thr Ser Glu Gln Gln Glu Cys Ala Arg Lys Lys
 130 135 140
 Cys Phe Ser Ser His Cys Gln Lys Ala Asp Phe Lys Phe Ser Phe Ser
 145 150 155 160
 Glu Gln Lys Asp Leu Glu Ile Asp Glu Ala Asp Glu Phe Leu Glu Lys
 165 170 175
 Lys Arg Val Gln Thr Pro Gln Cys Asp Ser Arg Arg Cys Gln Gly Ser
 180 185 190
 Val Lys Ala Ser Pro Pro Leu Gln Asp Ser Val Ser Gln Ala Cys Gln
 195 200 205
 Ser Leu Cys Thr Asp Lys Asp Gly Ala Leu Ala Leu Pro Ser Leu Cys
 210 215 220
 Pro Lys Tyr Arg Lys Phe Gln Lys Ala Phe Gly Thr Asp Lys Ile Arg
 225 230 235 240
 Thr Leu Glu Ser Gly Val Arg Asp Val His Thr Ala Ser Val Gln Pro
 245 250 255
 Asn Glu Thr Ser Glu Leu Glu Cys Phe Gly Gly Ala Gln Gly Cys Ala
 260 265 270
 Asp Leu His Val Ile Leu Lys Cys Glu Gly Met Lys Ala Ala Met Glu
 275 280 285

Ser Glu Asp Thr Glu Gly Gln Asp Pro Ser Pro Gln Cys Pro Ala Glu
 290 295 300
 Gln Pro Gln Gly Thr Pro Leu Pro Gln Asp Ser Ala Gly Pro His Gly
 305 310 315 320
 Leu Tyr Ser Leu Ser Ala Leu His Thr Tyr Glu Gln Ser Gly Asp Val
 325 330 335
 Ala Phe Ala Gly Val Gln Ser Lys Thr Val Lys Thr Glu Lys Pro Leu
 340 345 350
 Ser Arg Pro Asp Ala Gln Asp Glu Lys Pro Ser Glu Asn Gln Asp Leu
 355 360 365
 Tyr Leu Lys Ser Ser Met Gly Pro Lys Glu Asp Ser Ser Ser Leu Ala
 370 375 380
 Ser Glu Asp Arg Ser Ser Val Glu Arg Glu Val Ala Glu His Leu Ala
 385 390 395 400
 Lys Gly Phe Trp Ser Asp Ile Cys Ser Thr Asp Ser Pro Cys Gln Met
 405 410 415
 Gln Leu Ser Pro Thr Val Ala Lys Asp Gly Pro Glu Gln Gly Tyr Ser
 420 425 430
 Gln Arg Arg Ser Glu Cys Pro Trp Leu Gly Ile Arg Ile Ser Glu Ser
 435 440 445
 Pro Glu Pro Gly Gln Arg Thr Phe Thr Thr Leu Ser Ser Val Asn Cys
 450 455 460
 Pro Phe Ile Ser Thr Leu Ser Ser Glu Gly Cys Ser Ser Asn Leu Glu
 465 470 475 480
 Ile Gly Asn Tyr Asp Tyr Val Ser Glu Pro Gln Gln Glu Pro Cys Pro
 485 490 495
 Tyr Ala Cys Val Ile Ser Leu Gly Asp Asp Ser Glu Thr Asp Thr Glu
 500 505 510
 Gly Asp Ser Glu Ser Cys Ser Ala Arg Glu Gln Asp Cys Glu Val Lys

515 520 525
 Leu Pro Phe Asn Ala Gln Arg Ile Ile Ser Leu. Ser Arg Asn Asp Phe
 530 535 540
 Gln Ser Leu Leu Lys Met His Lys Leu Thr Pro Glu Gln Leu Asp Cys
 545 550 555 560
 Ile His Asp Ile Arg Arg Arg Ser Lys Asn Arg Ile Ala Ala Gln Arg
 565 570 575
 Cys Arg Lys Arg Lys Leu Asp Cys Ile Gln Asn Leu Glu Ser Glu Ile
 580 585 590
 Glu Lys Leu Gln Ser Glu Lys Glu Ser Leu Leu Lys Glu Arg Asp His
 595 600 605
 Ile Leu Ser Thr Leu Gly Glu Thr Lys Gln Asn Leu Thr Gly Leu Cys
 610 615 620
 Gln Gln Val Cys Lys Glu Ala Ala Leu Ser Pro Glu Gln Ile Gln Ile
 625 630 635 640
 Leu Ala Lys Tyr Ser Ala Ser Asp Cys Pro Leu Ser Phe Leu Ile Ser
 645 650 655
 Glu Lys Gly Lys Ser Thr Pro Asp Gly Glu Leu Ala Phe Thr Ser Val
 660 665 670
 Phe Ser Val Ser Asp Val Pro Pro Thr Ala Pro Pro Pro Cys Gly Arg
 675 680 685
 Gly Ser Ser Ala Ala Ser Gln Glu Leu Val Gln Glu Ser Pro Pro Thr
 690 695 700
 Thr Ala Ala Ala Pro Glu Gln Ala Thr Leu Leu Glu Pro Cys Arg Gln
 705 710 715 720
 Ser Ala Gly Ile Ser Asp Phe Cys Gln Gln Met Ser Asp Lys Cys Thr
 725 730 735
 Thr Asp Glu

<210> 517

<211> 822

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (7).. (588)

<400> 517

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      Met Pro Val Trp Gly Gly Gly Asn Lys Cys Gly Ala Cys Gly
          1              5              10
aga acc gtg tac cac gcg gaa gag gtg cag tgc gat ggg cgg agc ttc      96
Arg Thr Val Tyr His Ala Glu Glu Val Gln Cys Asp Gly Arg Ser Phe
      15              20              25              30
cat cgc tgc tgc ttc ctg tgc atg gtt tgc agg aaa aat tta gac agc      144
His Arg Cys Cys Phe Leu Cys Met Val Cys Arg Lys Asn Leu Asp Ser
          35              40              45
aca aca gtg gcg att cat gat gaa gag atc tac tgc aaa tcc tgc tac      192
Thr Thr Val Ala Ile His Asp Glu Glu Ile Tyr Cys Lys Ser Cys Tyr
          50              55              60
gga aag aag tat gga cca aaa ggc tat ggt tat ggc cag ggc gct ggc      240
Gly Lys Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala Gly
          65              70              75
acg ctc aac atg gac cgc ggt gag aga ctg ggc atc aag cca gag agt      288
Thr Leu Asn Met Asp Arg Gly Glu Arg Leu Gly Ile Lys Pro Glu Ser
          80              85              90
gct caa cct cac agg cct acg aca aat cca aac act tct aaa ttt gcc      336

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Ala Gln Pro His Arg Pro Thr Thr Asn Pro Asn Thr Ser Lys Phe Ala
 95 100 105 110
 cag aaa tat gga gga gct gag aag tgt tcc agg tgt ggg gat tcc gtg 384
 Gln Lys Tyr Gly Gly Ala Glu Lys Cys Ser Arg Cys Gly Asp Ser Val
 115 120 125
 tat gct gcg gag aag atc att gga gct ggg aag ccc tgg cac aaa aac 432
 Tyr Ala Ala Glu Lys Ile Ile Gly Ala Gly Lys Pro Trp His Lys Asn
 130 135 140
 tgt ttc cgg tgt gcc aag tgt ggg aag agt ctg gag tct aca act ctg 480
 Cys Phe Arg Cys Ala Lys Cys Gly Lys Ser Leu Glu Ser Thr Thr Leu
 145 150 155
 act gag aaa gaa ggc gaa atc tac tgt aaa ggg tgc tac gca aag aac 528
 Thr Glu Lys Glu Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys Asn
 160 165 170
 ttt ggg ccc aag gga ttt ggc tat ggt caa ggg gca ggg gcc ctt gtt 576
 Phe Gly Pro Lys Gly Phe Gly Tyr Gly Gln Gly Ala Gly Ala Leu Val
 175 180 185 190
 cat gct cag taa tgggtggaac ccagtaagca cgacagagaa tctccattac 628
 His Ala Gln
 caaactgcag atggcggttta tggcgctcac tactgtgaaa cagccagcac ttggcactgg 688
 gcataccga gctgcctgtg ggggctggac cgacagcgct gcactctccc gccactcac 748
 tagcgtctaa gagcacacga attcactatc gattctggaa ccttcagagg tctccctata 808
 gtgagtcgga ttaa 822

<210> 518

<211> 193

<212> PRT

<213> Mus musculus

<400> 518

Met Pro Val Trp Gly Gly Gly Asn Lys Cys Gly Ala Cys Gly Arg Thr
 1 5 10 15
 Val Tyr His Ala Glu Glu Val Gln Cys Asp Gly Arg Ser Phe His Arg
 20 25 30
 Cys Cys Phe Leu Cys Met Val Cys Arg Lys Asn Leu Asp Ser Thr Thr
 35 40 45
 Val Ala Ile His Asp Glu Glu Ile Tyr Cys Lys Ser Cys Tyr Gly Lys
 50 55 60
 Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala Gly Thr Leu
 65 70 75 80
 Asn Met Asp Arg Gly Glu Arg Leu Gly Ile Lys Pro Glu Ser Ala Gln
 85 90 95
 Pro His Arg Pro Thr Thr Asn Pro Asn Thr Ser Lys Phe Ala Gln Lys
 100 105 110
 Tyr Gly Gly Ala Glu Lys Cys Ser Arg Cys Gly Asp Ser Val Tyr Ala
 115 120 125
 Ala Glu Lys Ile Ile Gly Ala Gly Lys Pro Trp His Lys Asn Cys Phe
 130 135 140
 Arg Cys Ala Lys Cys Gly Lys Ser Leu Glu Ser Thr Thr Leu Thr Glu
 145 150 155 160
 Lys Glu Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys Asn Phe Gly
 165 170 175
 Pro Lys Gly Phe Gly Tyr Gly Gln Gly Ala Gly Ala Leu Val His Ala
 180 185 190
 Gln

<210> 519

<211> 938

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (131).. (712)

<400> 519

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ctttttgttt acaaatctaa gataacagta taataacaagt agtaagtcaa ccctcccagc 120
agctgccaga atg cca aac tgg gga gga ggc aag aaa tgt ggg gta tgc 169
      Met Pro Asn Trp Gly Gly Gly Lys Lys Cys Gly Val Cys
              1              5              10
cag aag acg gtc tac ttt gct gag gag gtc cag tgc gag ggc aac agc 217
Gln Lys Thr Val Tyr Phe Ala Glu Glu Val Gln Cys Glu Gly Asn Ser
      15              20              25
ttc cat aaa tcc tgc ttc ctg tgt atg gtc tgc aag aaa aat ctg gac 265
Phe His Lys Ser Cys Phe Leu Cys Met Val Cys Lys Lys Asn Leu Asp
      30              35              40              45
agc acc act gtg gca gtg cat gga gaa gag atc tat tgc aag tca tgt 313
Ser Thr Thr Val Ala Val His Gly Glu Glu Ile Tyr Cys Lys Ser Cys
              50              55              60
tac ggc aag aag tac ggg cca aaa ggc tac ggc tac ggg cag ggc gca 361
Tyr Gly Lys Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala
              65              70              75
ggc acg ctg agc aca gac aag ggg gag tct ctg ggc atc aag cat gag 409
Gly Thr Leu Ser Thr Asp Lys Gly Glu Ser Leu Gly Ile Lys His Glu
              80              85              90
gaa gcc cct gga cac agg ccc acc acc aac ccc aat gca tcc aag ttt 457

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Glu Ala Pro Gly His Arg Pro Thr Thr Asn Pro Asn Ala Ser Lys Phe
 95 100 105
 gcc cag aag att ggc ggc tct gag cgc tgt ccc cgc tgt agc cag gcg 505
 Ala Gln Lys Ile Gly Gly Ser Glu Arg Cys Pro Arg Cys Ser Gln Ala
 110 115 120 125
 gtc tat gct gcg gag aag gtg atc ggt gca ggc aag tcc tgg cat aag 553
 Val Tyr Ala Ala Glu Lys Val Ile Gly Ala Gly Lys Ser Trp His Lys
 130 135 140
 tcc tgc ttc cga tgt gcc aag tgt ggc aaa ggc ctt gag tgc acc acc 601
 Ser Cys Phe Arg Cys Ala Lys Cys Gly Lys Gly Leu Glu Ser Thr Thr
 145 150 155
 ctg gca gac aag gat ggt gag atc tac tgt aaa gga tgc tat gcc aaa 649
 Leu Ala Asp Lys Asp Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys
 160 165 170
 aac ttt ggc ccc aaa ggt ttt ggc ttt gga cag gga gct gga gcc ttg 697
 Asn Phe Gly Pro Lys Gly Phe Gly Phe Gly Gln Gly Ala Gly Ala Leu
 175 180 185
 gtt cac tca gag tga ggctgccacc gcctgcgcac cctgcttact cctaagcttt 752
 Val His Ser Glu
 190
 tcatacagcgg tccattccca agccttggac acctccgagc tcctctccct cactcagccc 812
 cgctgcacat cactaatgcc ttggacttgg gtatctggct ttttgtggct cagggatctg 872
 cctgagctcc ttccccacga agggtttccct cctgcctggc atttgatacc attaccttta 932
 ggagac 938

<210> 520

<211> 193

<212> PRT

<213> Mus musculus

<400> 520

Met Pro Asn Trp Gly Gly Gly Lys Lys Cys Gly Val Cys Gln Lys Thr
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 Val Tyr Phe Ala Glu Glu Val Gln Cys Glu Gly Asn Ser Phe His Lys
 20 25 30
 Ser Cys Phe Leu Cys Met Val Cys Lys Lys Asn Leu Asp Ser Thr Thr
 35 40 45
 Val Ala Val His Gly Glu Glu Ile Tyr Cys Lys Ser Cys Tyr Gly Lys
 50 55 60
 Lys Tyr Gly Pro Lys Gly Tyr Gly Tyr Gly Gln Gly Ala Gly Thr Leu
 65 70 75 80
 Ser Thr Asp Lys Gly Glu Ser Leu Gly Ile Lys His Glu Glu Ala Pro
 85 90 95
 Gly His Arg Pro Thr Thr Asn Pro Asn Ala Ser Lys Phe Ala Gln Lys
 100 105 110
 Ile Gly Gly Ser Glu Arg Cys Pro Arg Cys Ser Gln Ala Val Tyr Ala
 115 120 125
 Ala Glu Lys Val Ile Gly Ala Gly Lys Ser Trp His Lys Ser Cys Phe
 130 135 140
 Arg Cys Ala Lys Cys Gly Lys Gly Leu Glu Ser Thr Thr Leu Ala Asp
 145 150 155 160
 Lys Asp Gly Glu Ile Tyr Cys Lys Gly Cys Tyr Ala Lys Asn Phe Gly
 165 170 175
 Pro Lys Gly Phe Gly Phe Gly Gln Gly Ala Gly Ala Leu Val His Ser
 180 185 190
 Glu

<210> 521

<211> 1111

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (1).. (372)

<400> 521

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  1             5             10            15
atc att caa ggt ctt att att gat gct ttt gga gag ctg cgg gac cag 96
Ile Ile Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln
      20             25            30
cag gag caa gta cgg gaa gac atg gag acc aag tgc ttc atc tgc ggc 144
Gln Glu Gln Val Arg Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly
      35             40            45
att ggc aat gac tac ttt gac acg acc cct cat ggt ttt gaa aca cat 192
Ile Gly Asn Asp Tyr Phe Asp Thr Thr Pro His Gly Phe Glu Thr His
      50             55            60
aca ctg caa gag cac aac tta gcc aat tat cta ttc ttt ctg atg tat 240
Thr Leu Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met Tyr
      65             70            75            80
ttg att aac aag gat gaa aca gaa cat acg ggc cag gaa tcc tat gtg 288
Leu Ile Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser Tyr Val
      85             90            95
tgg aag atg tac cag gaa agg tgt tgg gac ttc ttc cca gct gga gac 336
Trp Lys Met Tyr Gln Glu Arg Cys Trp Asp Phe Phe Pro Ala Gly Asp

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100 105 110
 tgc ttt cgg aag caa tat gaa gat cag ctc ggg taa acctgagttc 382
 Cys Phe Arg Lys Gln Tyr Glu Asp Gln Leu Gly
 115 120
 acgacaagct acagttctga acagccacct tctaatagcaa cagagtcctgt cttttacact 442
 ttaacaacaa aaaatagatt tggtaattaa cttggctttt gtgcacgaag gatggcaaag 502
 tgtcaaggaa tccacctgac tgctaacgga gcctcgtttt ctacaaactt agtagttttt 562
 caccgacatg gticagagag aaatgcgaaa tcttgaacac ctgaacgtca tgtaagagga 622
 cccttgccag ggactgatgg gcagaactac acaaaatcat gtccaactca tgttaccttc 682
 gatctaattt ttccatggta cttgctagtg actgtctcca gaatcagctt gaaaagcttt 742
 aagcagctaa agaaatagaa aacaaacact ttgtcgaaac tgaaatatcg attaatgtcc 802
 itaaaaaatc tctttagata tagctatgca agttttttat gtttgtgttc cagaaggaca 862
 actccattaa acagctgtgc tgctcctctg tcttacgtca tgacactgca ctigcagggt 922
 attcacgtca tttcttcagt aacagcttgt cacctgctgt tatctggaga aaggcactgt 982
 actgaaattt cagaaaaaat ctcaatctta taccaaactt gagtgatgca atatgggtccc 1042
 atgtaagtag tggagctgcc atgttttagg tcaatctcca ataaaaagaa gtgcccactg 1102
 caataaagt 1111

<210> 522

<211> 123

<212> PRT

<213> Mus musculus

<400> 522

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 Ile Ile Gln Gly Leu Ile Ile Asp Ala Phe Gly Glu Leu Arg Asp Gln
 20 25 30

Gln Glu Gln Val Arg Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly
 35 40 45
 Ile Gly Asn Asp Tyr Phe Asp Thr Thr Pro His Gly Phe Glu Thr His
 50 55 60
 Thr Leu Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met Tyr
 65 70 75 80
 Leu Ile Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser Tyr Val
 85 90 95
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 Cys Phe Arg Lys Gln Tyr Glu Asp Gln Leu Gly
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<220>

<221> CDS

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<400> 523

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 tct ttc aga gag cgg atc tca agt gag gca gaa gac ttg gtg gca aat 96
 Ser Phe Arg Glu Arg Ile Ser Ser Glu Ala Glu Asp Leu Val Ala Asn
 20 25 30

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 ttt ttc cca aag aag tta cta gaa ctt gat agt ttt ttg aag gaa cca 144
 Phe Phe Pro Lys Lys Leu Leu Glu Leu Asp Ser Phe Leu Lys Glu Pro
 35 40 45
 att cta aat atc cat gac cta act cag atc cac tca gac atg aac ctc 192
 Ile Leu Asn Ile His Asp Leu Thr Gln Ile His Ser Asp Met Asn Leu
 50 55 60
 cca gtc cct gac ccc att ctc ctc acc aat agc cac gat gga ctg gat 240
 Pro Val Pro Asp Pro Ile Leu Leu Thr Asn Ser His Asp Gly Leu Asp
 65 70 75 80
 ggt ccc act tac aag aag cgc agg ttg gat gaa tgt gaa gag gcc ttt 288
 Gly Pro Thr Tyr Lys Lys Arg Arg Leu Asp Glu Cys Glu Glu Ala Phe
 85 90 95
 caa gga acc aag gtg ttt gtg atg ccc aat ggg atg ttg aaa agc aac 336
 Gln Gly Thr Lys Val Phe Val Met Pro Asn Gly Met Leu Lys Ser Asn
 100 105 110
 cag cag ctt gtg ggc att att gag aaa gta aaa ccc gag att cgg ctg 384
 Gln Gln Leu Val Gly Ile Ile Glu Lys Val Lys Pro Glu Ile Arg Leu
 115 120 125
 ctg atc gag aaa tgt aac acg gtc aaa atg tgg gtt cag ctg ttg att 432
 Leu Ile Glu Lys Cys Asn Thr Val Lys Met Trp Val Gln Leu Leu Ile
 130 135 140
 ccc aga ata gaa gat ggg aac aac ttc ggg gta tca att cag gag gaa 480
 Pro Arg Ile Glu Asp Gly Asn Asn Phe Gly Val Ser Ile Gln Glu Glu
 145 150 155 160
 aca gtt gct gaa cta aga act gtg gag agt gaa ccc gca tct tac ctg 528
 Thr Val Ala Glu Leu Arg Thr Val Glu Ser Glu Pro Ala Ser Tyr Leu
 165 170 175
 gac cag att tct aga tat tat att aca aga gcc ggg ttg gtt tct aaa 576
 Asp Gln Ile Ser Arg Tyr Tyr Ile Thr Arg Ala Gly Leu Val Ser Lys

180	185	190	
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Ile Ala Lys Tyr Pro His Val Glu Asp Tyr Arg Arg Thr Val Thr Glu			
195	200	205	
att gat gag aaa gaa tac atc agc ctc cgg ctc atc atc tca gag ctg			672
Ile Asp Glu Lys Glu Tyr Ile Ser Leu Arg Leu Ile Ile Ser Glu Leu			
210	215	220	
agg aat cag tat gtc act ctc cat gac atg atc ctg aaa aac att gag			720
Arg Asn Gln Tyr Val Thr Leu His Asp Met Ile Leu Lys Asn Ile Glu			
225	230	235	240
aag atc aaa cgg ccc cgg agc agc aat gca gag aca ctg tac tga			765
Lys Ile Lys Arg Pro Arg Ser Ser Asn Ala Glu Thr Leu Tyr			
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<211> 254

<212> PRT

<213> Mus musculus

<400> 524

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Phe Phe Pro Lys Lys Leu Leu Glu Leu Asp Ser Phe Leu Lys Glu Pro	
35 40 45	
Ile Leu Asn Ile His Asp Leu Thr Gln Ile His Ser Asp Met Asn Leu	
50 55 60	

Pro Val Pro Asp Pro Ile Leu Leu Thr Asn Ser His Asp Gly Leu Asp
 65 70 75 80
 Gly Pro Thr Tyr Lys Lys Arg Arg Leu Asp Glu Cys Glu Glu Ala Phe
 85 90 95
 Gln Gly Thr Lys Val Phe Val Met Pro Asn Gly Met Leu Lys Ser Asn
 100 105 110
 Gln Gln Leu Val Gly Ile Ile Glu Lys Val Lys Pro Glu Ile Arg Leu
 115 120 125
 Leu Ile Glu Lys Cys Asn Thr Val Lys Met Trp Val Gln Leu Leu Ile
 130 135 140
 Pro Arg Ile Glu Asp Gly Asn Asn Phe Gly Val Ser Ile Gln Glu Glu
 145 150 155 160
 Thr Val Ala Glu Leu Arg Thr Val Glu Ser Glu Pro Ala Ser Tyr Leu
 165 170 175
 Asp Gln Ile Ser Arg Tyr Tyr Ile Thr Arg Ala Gly Leu Val Ser Lys
 180 185 190
 Ile Ala Lys Tyr Pro His Val Glu Asp Tyr Arg Arg Thr Val Thr Glu
 195 200 205
 Ile Asp Glu Lys Glu Tyr Ile Ser Leu Arg Leu Ile Ile Ser Glu Leu
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<211> 529

<212> DNA

<213> Mus musculus

<400> 525

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 aggacgacca tgaaccctaa taatggtttc cctaatacata ttaatgggat caccaaactc 240
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 ggcaattcaa ctatgagttg aagcggtaat tacaggcttc ggcaacaaac taaaaggtta 360
 actggccaac ttccttccac aggggaattcc aattccacta attccattcc taataattat 420
 ggaaacattt ggcctattta tccagccatt ggcatgggca gtccggctta cggctaacat 480
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<222> (697).. (2409)

<400> 526

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cctactcagg accagaagcc agcacagcgc gggttcgggg aaacaggctg ccttccactc 480
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 1 5
 gtg aag cag tat att tcc aaa atg ata gag gac agc ggg ccg ggc atg 762
 Val Lys Gln Tyr Ile Ser Lys Met Ile Glu Asp Ser Gly Pro Gly Met
 10 15 20
 aag gta ctt ctc atg gat aaa gaa acg act ggt ata gtg agt atg gtc 810
 Lys Val Leu Leu Met Asp Lys Glu Thr Thr Gly Ile Val Ser Met Val
 25 30 35
 tac aca cag tca gag att ctt cag aag gaa gta tac ctc ttc gaa cga 858
 Tyr Thr Gln Ser Glu Ile Leu Gln Lys Glu Val Tyr Leu Phe Glu Arg
 40 45 50
 att gat tct caa aat cga gag atc atg aaa cac cta aaa gca att tgt 906
 Ile Asp Ser Gln Asn Arg Glu Ile Met Lys His Leu Lys Ala Ile Cys
 55 60 65 70
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 Phe Leu Arg Pro Thr Lys Glu Asn Val Glu Tyr Leu Ile Gln Glu Leu
 75 80 85
 cga aga ccc aag tac agc ata tat ttt att tat ttc agt aat gtg atc 1002
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 Ser Lys Ser Asp Val Lys Ser Leu Ala Glu Ala Asp Glu Gln Glu Val
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 gtg gct gaa gtt cag gaa ttt tat ggt gat tac att gcg gtg aat cca 1098

Val Ala Glu Val Gln Glu Phe Tyr Gly Asp Tyr Ile Ala Val Asn Pro
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 135 140 145 150
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 Thr Tyr Gln Ala Met Val His Glu Leu Leu Gly Ile Asn Asn Asn Arg
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 gtc ctg tcc gct gaa aat gat gaa ttc tat gct aat aac atg tac ctg 1530
 Val Leu Ser Ala Glu Asn Asp Glu Phe Tyr Ala Asn Asn Met Tyr Leu
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 Met Lys Ala Phe Val Glu Asn Tyr Pro Gln Phe Lys Lys Met Ser Gly
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 375 380 385 390
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 Tyr Ala Leu His Tyr Glu Arg His Ser Ser Asn Ser Leu Pro Gly Leu
 395 400 405
 ata gtg gac ctc agg agt aaa ggt gtt gct gag aag tat cgg aag ctt 1962
 Ile Val Asp Leu Arg Ser Lys Gly Val Ala Glu Lys Tyr Arg Lys Leu
 410 415 420
 gtg tcg gca gtt gtt gaa tat ggt ggt aaa cgg gtt aga gga agt gac 2010
 Val Ser Ala Val Val Glu Tyr Gly Gly Lys Arg Val Arg Gly Ser Asp

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 440 445 450
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 Gly Leu Lys Gly Val Glu Asn Val Tyr Thr Gln His Gln Pro Phe Leu
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 cat gag acc ctg gat cat ctc atc aaa gga agg ctt aag gaa aac ctc 2154
 His Glu Thr Leu Asp His Leu Ile Lys Gly Arg Leu Lys Glu Asn Leu
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<212> PRT

<213> Mus musculus

<400> 527

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 Val Tyr Leu Phe Glu Arg Ile Asp Ser Gln Asn Arg Glu Ile Met Lys
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 His Leu Lys Ala Ile Cys Phe Leu Arg Pro Thr Lys Glu Asn Val Glu
 65 70 75 80
 Tyr Leu Ile Gln Glu Leu Arg Arg Pro Lys Tyr Ser Ile Tyr Phe Ile
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 Tyr Phe Ser Asn Val Ile Ser Lys Ser Asp Val Lys Ser Leu Ala Glu
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 Tyr Ile Ala Val Asn Pro His Leu Phe Ser Leu Asn Ile Leu Gly Cys
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 Cys Gln Gly Arg Asn Trp Asp Pro Ala Gln Leu Ser Arg Thr Thr Gln
 145 150 155 160

Gly Leu Thr Ala Leu Leu Leu Ser Leu Lys Lys Cys Pro Met Ile Arg
 165 170 175
 Tyr Gln Leu Ser Ser Glu Ala Ala Lys Arg Leu Gly Glu Cys Val Lys
 180 185 190
 Gln Val Ile Ser Lys Glu Tyr Glu Leu Phe Glu Phe Arg Arg Thr Glu
 195 200 205
 Val Pro Pro Leu Leu Leu Ile Leu Asp Arg Cys Asp Asp Ala Ile Thr
 210 215 220
 Pro Leu Leu Asn Gln Trp Thr Tyr Gln Ala Met Val His Glu Leu Leu
 225 230 235 240
 Gly Ile Asn Asn Asn Arg Ile Asp Leu Ser Arg Val Pro Gly Ile Ser
 245 250 255
 Lys Asp Leu Arg Glu Val Val Leu Ser Ala Glu Asn Asp Glu Phe Tyr
 260 265 270
 Ala Asn Asn Met Tyr Leu Asn Phe Ala Glu Ile Gly Ser Asn Ile Lys
 275 280 285
 Asn Leu Met Glu Asp Phe Gln Lys Lys Arg Pro Lys Glu Gln Gln Lys
 290 295 300
 Leu Glu Ser Ile Ala Asp Met Lys Ala Phe Val Glu Asn Tyr Pro Gln
 305 310 315 320
 Phe Lys Lys Met Ser Gly Thr Val Ser Lys His Val Thr Val Val Gly
 325 330 335
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 340 345 350
 Val Glu Gln Glu Leu Ala Cys Gln Asn Asp His Ser Ser Ala Leu Gln
 355 360 365
 Asn Val Lys Arg Leu Leu Gln Asn Pro Lys Val Thr Glu Phe Asp Ala
 370 375 380
 Val Arg Leu Val Met Leu Tyr Ala Leu His Tyr Glu Arg His Ser Ser

385 390 395 400
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 405 410 415
 Glu Lys Tyr Arg Lys Leu Val Ser Ala Val Val Glu Tyr Gly Gly Lys
 420 425 430
 Arg Val Arg Gly Ser Asp Leu Phe Ser Pro Lys Asp Ala Val Ala Ile
 435 440 445
 Thr Lys Gln Phe Leu Lys Gly Leu Lys Gly Val Glu Asn Val Tyr Thr
 450 455 460
 Gln His Gln Pro Phe Leu His Glu Thr Leu Asp His Leu Ile Lys Gly
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 Asp Arg Pro Gln Asp Ile Ile Val Phe Ile Ile Gly Gly Ala Thr Tyr
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 Glu Glu Ala Leu Thr Val Tyr Asn Leu Asn Arg Thr Thr Pro Gly Val
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<222> (1).. (1215)

<400> 528

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           20             25             30
agg cgg gga ata aaa cgg agc gaa gac agc aag gaa act tac aaa ctg     144
Arg Arg Gly Ile Lys Arg Ser Glu Asp Ser Lys Glu Thr Tyr Lys Leu
           35             40             45
ccg cac cgg ctg att gag aaa aag aga cgt gac cgg att aac gag tgc     192
Pro His Arg Leu Ile Glu Lys Lys Arg Arg Asp Arg Ile Asn Glu Cys
           50             55             60
att gcc cag ctg aag gat ctc cta ccc gaa cat ctc aaa ctt act act     240
Ile Ala Gln Leu Lys Asp Leu Leu Pro Glu His Leu Lys Leu Thr Thr
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Leu Gly His Leu Glu Lys Ala Val Val Leu Glu Leu Thr Leu Lys His
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gtg aaa gca ttg aca aat cta att gat cag cag cag cag aaa atc att     336
Val Lys Ala Leu Thr Asn Leu Ile Asp Gln Gln Gln Gln Lys Ile Ile
           100            105            110
gcc ctg cag agc ggt tta caa gct ggt gat ttg tgc gga aga aat ctc     384
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 Ser Ser Gln Leu Val Thr His Leu His Arg Val Val Ser Glu Leu Leu
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 Asp Leu Lys Glu Lys Pro Ser Phe Leu Ala Lys Gly Ser Glu Gly Pro
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 225 230 235 240
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 Glu Leu Glu Lys Gly Asp Leu Arg Ser Glu Gln Pro Tyr Phe Lys Ser
 245 250 255
 gac cat gga cgc agg ttc gcc gtg gga gaa cgt gtc agc aca att aag 816
 Asp His Gly Arg Arg Phe Ala Val Gly Glu Arg Val Ser Thr Ile Lys
 260 265 270
 caa gaa tcc gaa gag ccc ccc acc aca aag agc cga atg cag ctc tca 864
 Gln Glu Ser Glu Glu Pro Pro Thr Thr Lys Ser Arg Met Gln Leu Ser

275 280 285
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 Glu Glu Glu Gly His Phe Ala Gly Ser Asp Leu Met Gly Ser Pro Phe
 290 295 300
 ctt ggg cca cac cca cat cag cct cct ttt tgc ctt ccc ttc tat ctc 960
 Leu Gly Pro His Pro His Gln Pro Pro Phe Cys Leu Pro Phe Tyr Leu
 305 310 315 320
 atc cca cca tcg gcc act gcc tac ctg cct atg ctg gag aaa tgc tgg 1008
 Ile Pro Pro Ser Ala Thr Ala Tyr Leu Pro Met Leu Glu Lys Cys Trp
 325 330 335
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 340 345 350
 gca gcc ctc tcc agc ttc atg aac cca gac aag ata ccg act ccc ttg 1104
 Ala Ala Leu Ser Ser Phe Met Asn Pro Asp Lys Ile Pro Thr Pro Leu
 355 360 365
 ctt ctg ccc cag aga ctc cct tct cct ttg gca cat tcg tcc ctt gac 1152
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 370 375 380
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 Ser Ser Ala Leu Leu Gln Ala Leu Lys Gln Ile Pro Pro Leu Asn Leu
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 Glu Thr Lys Asp
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 atgtatgttt gtatatgtag gacaataagt tccttctgac acaaggagaga cacgagaagg 1435
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<211> 404

<212> PRT

<213> Mus musculus;

<400> 529

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 35 40 45
 Pro His Arg Leu Ile Glu Lys Lys Arg Arg Asp Arg Ile Asn Glu Cys
 50 55 60
 Ile Ala Gln Leu Lys Asp Leu Leu Pro Glu His Leu Lys Leu Thr Thr
 65 70 75 80
 Leu Gly His Leu Glu Lys Ala Val Val Leu Glu Leu Thr Leu Lys His
 85 90 95
 Val Lys Ala Leu Thr Asn Leu Ile Asp Gln Gln Gln Gln Lys Ile Ile
 100 105 110
 Ala Leu Gln Ser Gly Leu Gln Ala Gly Asp Leu Ser Gly Arg Asn Leu
 115 120 125
 Glu Ala Gly Gln Glu Met Phe Cys Ser Gly Phe Gln Thr Cys Ala Arg
 130 135 140
 Glu Val Leu Gln Tyr Leu Ala Lys His Glu Asn Thr Arg Asp Leu Lys
 145 150 155 160
 Ser Ser Gln Leu Val Thr His Leu His Arg Val Val Ser Glu Leu Leu

	165	170	175
Gln Gly Gly Ala Ser Arg Lys Pro Leu Asp Ser Ala Pro Lys Ala Val			
	180	185	190
Asp Leu Lys Glu Lys Pro Ser Phe Leu Ala Lys Gly Ser Glu Gly Pro			
	195	200	205
Gly Lys Asn Cys Val Pro Val Ile Gln Arg Thr Phe Ala Pro Ser Gly			
	210	215	220
Gly Glu Gln Ser Gly Ser Asp Thr Asp Thr Asp Ser Gly Tyr Gly Gly			
225	230	235	240
Glu Leu Glu Lys Gly Asp Leu Arg Ser Glu Gln Pro Tyr Phe Lys Ser			
	245	250	255
Asp His Gly Arg Arg Phe Ala Val Gly Glu Arg Val Ser Thr Ile Lys			
	260	265	270
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Leu Leu Pro Gln Arg Leu Pro Ser Pro Leu Ala His Ser Ser Leu Asp			
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<211> 215

<212> PRT

<213> Mus musculus

<400> 536

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<211> 1080

<212> DNA

<213> Mus musculus

<220>

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<222> (85).. (489)

<400> 537

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 Lys Lys Glu Glu Lys Glu Ala Glu Glu Lys Ala Ala Leu Glu Gln Pro
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<211> 134

<212> PRT

<213> Mus musculus

<400> 538

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1428/2644

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 Val Thr Glu Asp Phe Pro Lys Asp Ser Phe Phe Asn Phe Phe Ser Pro
 365 370 375
 cat ggg atc agc tta aat gga ggg gta gaa aat gat gat ttt tta ctt 1506
 His Gly Ile Ser Leu Asn Gly Gly Val Glu Asn Asp Asp Phe Leu Leu
 380 385 390
 ggt cat aat ctg cgt act tac ata att cca aga tca gtg tta ttt ttc 1554
 Gly His Asn Leu Arg Thr Tyr Ile Ile Pro Arg Ser Val Leu Phe Phe
 395 400 405
 tca gga gat gca ctt gaa tct cag cag gag ggt gta gtt agg gaa gtt 1602
 Ser Gly Asp Ala Leu Glu Ser Gln Gln Glu Gly Val Val Arg Glu Val
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 aat gac gaa ata tat gac aaa att att tat gat gat tgg atg gct gca 1650
 Asn Asp Glu Ile Tyr Asp Lys Ile Ile Tyr Asp Asp Trp Met Ala Ala
 425 430 435 440
 att gaa gag gtt aaa gcc tgt tgc aaa aat ctt gag gca tta gta gaa 1698
 Ile Glu Glu Val Lys Ala Cys Cys Lys Asn Leu Glu Ala Leu Val Glu
 445 450 455
 gat att gat cgt taa aacagagtag atgcttttga aactaactgc tctacatgca 1753
 Asp Ile Asp Arg
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 gttactgaag acataagcag ttaatatgt cttgtgttct gcattttttc ctgtcatgcc 1813
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<210> 540

<211> 460

<212> PRT

<213> Mus musculus

<400> 540

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Arg	Ser	Glu	Gly	Val	Ser	Ile	Glu	Pro	Gly	Asp	Gly	Gly	Gln	His	Gly
				35				40					45		
Glu	Glu	Thr	Val	Ala	Ala	Gly	Val	Gly	Glu	Glu	Gly	Lys	Gly	Glu	Glu
				50				55					60		
Ala	Ala	Ala	Gly	Ser	Gly	Glu	Asp	Ala	Gly	Lys	Cys	Gly	Gly	Thr	Asp
				65				70					75		80
Glu	Asp	Ser	Asp	Ser	Asp	Arg	Pro	Lys	Gly	Leu	Ile	Gly	Tyr	Leu	Leu
				85				90						95	
Asp	Thr	Asp	Phe	Val	Glu	Ser	Leu	Pro	Val	Lys	Val	Lys	Cys	Arg	Val

100	105	110
Leu Ala Leu Lys Lys Leu Gln Thr Arg Ala Ala His Leu Glu Ser Lys		
115	120	125
Phe Leu Arg Glu Phe His Asp Ile Glu Arg Lys Phe Ala Glu Met Tyr		
130	135	140
Gln Pro Leu Leu Glu Lys Arg Arg Gln Ile Ile Asn Ala Val Tyr Glu		
145	150	155
Pro Thr Glu Glu Glu Cys Glu Tyr Lys Ser Asp Cys Glu Asp Tyr Phe		
165	170	175
Glu Glu Glu Met Asp Glu Glu Glu Glu Thr Asn Gly Asn Glu Asp Gly		
180	185	190
Met Val His Glu Tyr Val Asp Glu Asp Asp Gly Tyr Glu Asp Cys Tyr		
195	200	205
Tyr Asp Tyr Asp Asp Glu Glu Glu Glu Glu Glu Glu Asp Asp Ser Ala		
210	215	220
Gly Ala Thr Gly Gly Glu Glu Val Asn Glu Glu Asp Pro Lys Gly Ile		
225	230	235
Pro Asp Phe Trp Leu Thr Val Leu Lys Asn Val Glu Ala Leu Thr Pro		
245	250	255
Met Ile Lys Lys Tyr Asp Glu Pro Ile Leu Lys Leu Leu Thr Asp Ile		
260	265	270
Lys Val Lys Leu Ser Asp Pro Gly Glu Pro Leu Ser Phe Thr Leu Glu		
275	280	285
Phe His Phe Lys Pro Asn Glu Tyr Phe Lys Asn Glu Leu Leu Thr Lys		
290	295	300
Thr Tyr Val Leu Lys Ser Lys Leu Ala Cys Tyr Asp Pro His Pro Tyr		
305	310	315
Arg Gly Thr Ala Ile Glu Tyr Ala Thr Gly Cys Asp Ile Asp Trp Asn		
325	330	335

Glu Gly Lys Asn Val Thr Leu Arg Thr Ile Lys Lys Lys Gln Arg His
 340 345 350
 Arg Val Trp Gly Thr Val Arg Thr Val Thr Glu Asp Phe Pro Lys Asp
 355 360 365
 Ser Phe Phe Asn Phe Phe Ser Pro His Gly Ile Ser Leu Asn Gly Gly
 370 375 380
 Val Glu Asn Asp Asp Phe Leu Leu Gly His Asn Leu Arg Thr Tyr Ile
 385 390 395 400
 Ile Pro Arg Ser Val Leu Phe Phe Ser Gly Asp Ala Leu Glu Ser Gln
 405 410 415
 Gln Glu Gly Val Val Arg Glu Val Asn Asp Glu Ile Tyr Asp Lys Ile
 420 425 430
 Ile Tyr Asp Asp Trp Met Ala Ala Ile Glu Glu Val Lys Ala Cys Cys
 435 440 445
 Lys Asn Leu Glu Ala Leu Val Glu Asp Ile Asp Arg
 450 455 460

<210> 541

<211> 104

<212> DNA

<213> Mus musculus

<400> 541

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<210> 542

<211> 262

<212> DNA

<213> Mus musculus

<400> 542

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gtggagctca atggtgtggc acatcttggt cagcccaacc aggcagatgc cggatgctga 120
tgtaccaaca ccaaaaggca cctgagcgat ttgatgtcat tgacctggac ccctatggca 180
gccccgcccc ctctctggat gcagcagtcg aggctgtgag tgatggagga ctctgtgtg 240
tcacctgcac agacatggca gt 262
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<210> 543

<211> 280

<212> DNA

<213> Mus musculus

<400> 543

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agggggacca ggaggctctc atatgggggg aaactatgga gatgatcgac gtggcagagg 120
aggatatgac cggggcggct accggggccg aggtggggta cgtgggggct tcagatgggt 180
gcgggggtgt ggggacagag agcggtttgg ccctggcaag atggactcca ggggcgagca 240
cagacaggat cgcagggaac tgatcatatta gcctggctcc 280
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<210> 544

<211> 339

<212> DNA

<213> Mus musculus

<400> 544

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atccagactc acagtatggt gaacttatgt aaaagtacat taaagaagga aagattgtac 120
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cagttgagat aaccatcagt ttattaaaga gggaaatgga ccaaacaatg gctgccaatg 180
 ctcagaagaa taaattcttg attgatggat ttccaagaaa tcaagacaac ctttcaaggt 240
 tggacaacaaa ccatgggatg aaaagcagat gtatcttttg ttctgttttt tgactgtaat 300
 aatgagatct gtattgaacg atgtcttgaa aggggaaaa 339

<210> 545

<211> 953

<212> DNA

<213> *Mus musculus*

<400> 545

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 gagatggcca cgagagctgc tctgcaagct agacgtggga agaaaaagtc tgggtgcctc 180
 atcttgtgaa gccttgtgaa cgcagcctca tgcggttaat ttgaagtgcg gtttattaat 240
 cttagtgtat gattactggc cttttcattt atctataatt tacctaagat tacaatcag 300
 aagtcacttt gctaccagta tttagaagcc aaccacgatt attaataatg tccaacctgt 360
 ctgaccagcc agggtccttc tgacactgct ctaacagccc tctctgcact ccacctgaca 420
 ccaggcgcta attcaaagaa tttcttaact tcttgcttct ttctagaaag agaaacagtt 480
 ggtacgtttt gtgaattagg ctgtactact ttataactac atgcgtgcgt cttctgtcac 540
 tgcagactct ggtgagctct acttagaggt tcctgttaca gatcgatgca gagtctgggt 600
 ggttacagtt ttgaacntcg cagcagaagc ccagtcacac tgcagagtc agtcttgcct 660
 agtgtcctaa gtcnggaatg gccatngtag tcaaataatt ctccggaaga aaaaaaatg 720
 gccgagttcc ttgggggatt ctctgctggt tcaggggggc actgggccat atctgcgccc 780
 ctcgggtaga ggcggtatgt gccgctgcgg ctggcgaca gcgccagggt ggtgggatcc 840
 cgtttctctc cgccaggttg atccacaagg ggcactcttg cccaccgtg ttagaaagag 900
 ctccccacct gccgnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnn 953

<210> 546

<211> 730

<212> DNA

<213> *Mus musculus*

<400> 546

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tgcatacaat aacctgaaag gaatcttcag aatttagagc gaaagaacgc gggaagtttg 180
ctaacgcgaa cgctggcgga aatcgtgaag aaagatgact ttgttcttga ttcggagtat 240
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agagaaaaca agttcatagt tcgtgacttc cagtataacg aggaggagat gaaagcagat 480
taagaagaaa tgtccaggct gtcttattgc caagaaggag ccagttgtgg accacttggt 540
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cgggtttttg tggagictgt ntttaaggat ggcttgcggt gaacttccag caatgctcct 660
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tctggacagc 730

<210> 547

<211> 531

<212> DNA

<213> *Mus musculus*

<400> 547

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 ttcatgttgg ggtcatgtgc attcttttct aagacgtgga tagaagtttc tggttcttca 480
 gccaaagatg tggccaagca actttaagaa cagcagatgg tgatgagggg t 531

<210> 548

<211> 515

<212> DNA

<213> Mus musculus

<400> 548

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 cagctcagca aagggcgggt cgagctggac ggaccagacc tgggaaatgc ttcaggcttt 180
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 ttgattttat ggaccacca gctcctgaaa ctgtgatgag agccctagaa cttttgaatt 360
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<210> 549

<211> 3450

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (297).. (1379)

<400> 549 :

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 gcgcgggttg cgggcgcggg gtccggctcg ccgcgggcgg gcgcagagga gagcgtgcgg 240
 ctgcaggcag gagccccgc tcggccacct cctcgccccg ctgctgccgc tggaag atg 299

Met

1

tcg cag gag agg ccc acg ttc tac cgg cag gag ctg aac aag acc atc 347
 Ser Gln Glu Arg Pro Thr Phe Tyr Arg Gln Glu Leu Asn Lys Thr Ile

5

10

15

tgg gag gtg ccc gaa cga tac cag aac ctg tcc ccg gtg ggc tcg ggc 395
 Trp Glu Val Pro Glu Arg Tyr Gln Asn Leu Ser Pro Val Gly Ser Gly

20

25

30

gcc tat ggc tcg gtg tgt gct gct ttt gat aca aag acg ggc cat cgt 443
 Ala Tyr Gly Ser Val Cys Ala Ala Phe Asp Thr Lys Thr Gly His Arg

35

40

45

gtg gca gtt aag aag ctg tcg aga ccg ttt cag tcc atc att cac gcc 491
 Val Ala Val Lys Lys Leu Ser Arg Pro Phe Gln Ser Ile Ile His Ala

50

55

60

65

aaa agg acc tac cga gag ttg cgt ctg ctg aag cac atg aaa cac gaa 539
 Lys Arg Thr Tyr Arg Glu Leu Arg Leu Leu Lys His Met Lys His Glu

70

75

80

aat gtg att ggt ctg ttg gat gtg ttc aca ccc gca agg tca ctg gag 587
 Asn Val Ile Gly Leu Leu Asp Val Phe Thr Pro Ala Arg Ser Leu Glu

85

90

95

gaa ttc aat gac gtg tac ctg gtg acc cat ctc atg ggg gcg gac ctg 635

Glu Phe Asn Asp Val Tyr Leu Val Thr His Leu Met Gly Ala Asp Leu	
100	105
	110
aac aac atc gtg aag tgc cag aag ctg acc gac gac cac gtt cag ttt	683
Asn Asn Ile Val Lys Cys Gln Lys Leu Thr Asp Asp His Val Gln Phe	
115	120
	125
ctc atc tac cag atc ctc cga ggg ctg aag tat ata cat tcg gct gac	731
Leu Ile Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala Asp	
130	135
	140
	145
ata att cac agg gac cta aag ccc agc aac cta gct gtg aac gaa gac	779
Ile Ile His Arg Asp Leu Lys Pro Ser Asn Leu Ala Val Asn Glu Asp	
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igt gag ctc aag att ctg gat ttt ggg ctg gct cgg cac act gat gat	827
Cys Glu Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg His Thr Asp Asp	
165	170
	175
gag atg aca ggc tac gtg gct acc agg tgg tac cga gcc cca gag atc	875
Glu Met Thr Gly Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu Ile	
180	185
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atg ctg aat tgg atg cac tat aac cag aca gtg gat att tgg tcc gtg	923
Met Leu Asn Trp Met His Tyr Asn Gln Thr Val Asp Ile Trp Ser Val	
195	200
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ggc tgc atc atg gct gag ctg ttg acc gga aga acg ttg ttt cct ggt	971
Gly Cys Ile Met Ala Glu Leu Leu Thr Gly Arg Thr Leu Phe Pro Gly	
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	225
aca gac cat att gat cag ttg aag ctc att tta aga ctc gtt gga acc	1019
Thr Asp His Ile Asp Gln Leu Lys Leu Ile Leu Arg Leu Val Gly Thr	
230	235
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cca ggg gct gag ctt ctg aag aaa atc tcc tca gag tct gca aga aac	1067
Pro Gly Ala Glu Leu Leu Lys Lys Ile Ser Ser Glu Ser Ala Arg Asn	
245	250
	255

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 Tyr Ile Gln Ser Leu Ala Gln Met Pro Lys Met Asn Phe Ala Asn Val
 260 265 270
 ttt att ggt gcc aat ccc ctg gct gtc gac cta ctg gag aag atg ctc 1163
 Phe Ile Gly Ala Asn Pro Leu Ala Val Asp Leu Leu Glu Lys Met Leu
 275 280 285
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 Val Leu Asp Ser Asp Lys Arg Ile Thr Ala Ala Gln Ala Leu Ala His
 290 295 300 305
 gcc tac ttt gct cag tac cac gac cct gat gat gag cct gtt gct gac 1259
 Ala Tyr Phe Ala Gln Tyr His Asp Pro Asp Asp Glu Pro Val Ala Asp
 310 315 320
 cct tat gac cag tcc ttt gaa agc agg gac ctt ctc ata gat gag tgg 1307
 Pro Tyr Asp Gln Ser Phe Glu Ser Arg Asp Leu Leu Ile Asp Glu Trp
 325 330 335
 aag agc ctg acc tat gat gaa gtc atc agc ttt gtg cca cca ccc ctt 1355
 Lys Ser Leu Thr Tyr Asp Glu Val Ile Ser Phe Val Pro Pro Pro Leu
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 355 360
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<210> 550

<211> 360

<212> PRT

<213> Mus musculus

<400> 550

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20 25 30

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35 40 45

Arg Val Ala Val Lys Lys Leu Ser Arg Pro Phe Gln Ser Ile Ile His

50 55 60

Ala Lys Arg Thr Tyr Arg Glu Leu Arg Leu Leu Lys His Met Lys His

65 70 75 80

Glu Asn Val Ile Gly Leu Leu Asp Val Phe Thr Pro Ala Arg Ser Leu

85 90 95

Glu Glu Phe Asn Asp Val Tyr Leu Val Thr His Leu Met Gly Ala Asp

100 105 110

Leu Asn Asn Ile Val Lys Cys Gln Lys Leu Thr Asp Asp His Val Gln

115 120 125

Phe Leu Ile Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala

130 135 140

Asp Ile Ile His Arg Asp Leu Lys Pro Ser Asn Leu Ala Val Asn Glu

145 150 155 160

Asp Cys Glu Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg His Thr Asp

165 170 175

Asp Glu Met Thr Gly Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu

180 185 190

Ile Met Leu Asn Trp Met His Tyr Asn Gln Thr Val Asp Ile Trp Ser
 195 200 205
 Val Gly Cys Ile Met Ala Glu Leu Leu Thr Gly Arg Thr Leu Phe Pro
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 Gly Thr Asp His Ile Asp Gln Leu Lys Leu Ile Leu Arg Leu Val Gly
 225 230 235 240
 Thr Pro Gly Ala Glu Leu Leu Lys Lys Ile Ser Ser Glu Ser Ala Arg
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 Asn Tyr Ile Gln Ser Leu Ala Gln Met Pro Lys Met Asn Phe Ala Asn
 260 265 270
 Val Phe Ile Gly Ala Asn Pro Leu Ala Val Asp Leu Leu Glu Lys Met
 275 280 285
 Leu Val Leu Asp Ser Asp Lys Arg Ile Thr Ala Ala Gln Ala Leu Ala
 290 295 300
 His Ala Tyr Phe Ala Gln Tyr His Asp Pro Asp Asp Glu Pro Val Ala
 305 310 315 320
 Asp Pro Tyr Asp Gln Ser Phe Glu Ser Arg Asp Leu Leu Ile Asp Glu
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<211> 618

<212> DNA

<213> Mus musculus

<400> 551

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 gcagagctgt ccccagtaac tgacttcagg gaagcctgct gccgccagta tgaatggga 480
 gagtgacaaa gagggggctt ctgcaacttc atgcatttga agcccatctn cagagagcta 540
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<210> 552

<211> 277

<212> DNA

<213> Mus musculus

<400> 552

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 tggccaaatc ccttgcagta ctacctggtt cccgacatgg atgatgaaga aggagaggca 180
 gaagatgatg atgacgacga cgaagaggag gaggggctgg aagatatiga tgaagaagga 240
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<210> 553

<211> 966

<212> DNA

<213> Mus musculus

<400> 553

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 ttcataggct tccctttgcc ttaaaccitga agatgtctcc tcaagcctgt gggcagcatg 180
 cccagattcc cagactaaga cactgtgaca gttgtctgtc ggtccactgt gtttagttgc 240
 aaagatttca ccatgttgtt tgtttttgtt actgtcttaa aggggtgcaca tttgtgatca 300
 gcattgtgac ttggagataa taaaatttag actgttagact tgaaaaaaaa aaaagaagag 360
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 acttttagata gctttgttct agnaaaggng caaccacatt ttgcccac catgcgtttt 900
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<210> 554

<211> 427

<212> DNA

<213> Mus musculus

<400> 554

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 acaccatatg cagcggtatg cagtctgggt tggagggtca atgctggctt ccacgcctga 180
 gttctaccaa gtagccaca ccaaaaagga ttatgaagaa attggacctt gcatttgtcg 240

tcacaaacca gtgtttggag tcatgtccta aagttgacit citgttgatt gggttaggga 300
gatggaaatg agataatctt tctgatgacc tgtttttgtc tgaatggatg gtctctgaggt 360
ttttaaccaa acatgatcat acaggaatat ttaatgagtg tgicaacatg cagatgtaga 420
agagagc 427

<210> 555

<211> 307

<212> DNA

<213> Mus musculus

<400> 555

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gatcgacacc actgctcaag ggggtctgag ttccagacg aggaactgtg cagtgggaagg 180
cccttttagag ccttcaccga tgtcaggaat gggccctct tgaccttgcg agggcactag 240
tgctatgagc gtagagttag accgcagtga ggcttagta caccaaactg tatctcaaga 300
tgtgctg 307

<210> 556

<211> 466

<212> DNA

<213> Mus musculus

<400> 556

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gtgaaagcag acagtgagtg gcgacgatgc agatttcggg cagacaactt gaacaagctg 180
aagaatttat gcagcaaac tatgtgggag aaaatgaaga aaaaggaagc agtgggagac 240
gacgagtcg tcccagagaa cgtgctgaat ttcatgacc tcactgcaga cgcgctagtg 300

ccctgaaagt ctcacagatt aaaaaagtc gactcctcat tgatgaagcc atccagaagt 360
 gtgatgggga gcgggtaaag ctggaagcag agcgnittga gaacctccgc gagattggga 420
 accittctgca cccctctgtg cccattagta atgatgagga cgcgac 466

<210> 557

<211> 552

<212> DNA

<213> Mus musculus

<400> 557

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 gagagaagtg ccctcgatgt tggaagcata cctctgagac tgcagacgct ctctgtcctc 240
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 cacagtactg actggctgag gagatgagct gttagacagt tccctagaaa gaaatccaag 360
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 taaaagaata tttcttgtaa ctatagaaag aataatgtat gtatatatat atatatggag 480
 atatatatgc agatatacat atatacaggg cacacacaca cacacactca tgacttcttc 540
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<210> 558

<211> 337

<212> DNA

<213> Mus musculus

<400> 558

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gcagacacaa ggcctcctg ggaacagct gcatctgggc tagggggtcg ccgagcctgt 180
 ttctctgcgg gcgtggcgng gttgttgtta aagtggcagg ttgggcaaag cccactgggt 240
 cttttctttc ctgttatgaa tacatttgca cgtacagccc tgaatgcagg tgcagtttgg 300
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<210> 559

<211> 987

<212> DNA

<213> Mus musculus

<400> 559

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 cagaaatgct gagggatata atccgagaat aactgatgt ctatccagaa atcattgagc 180
 gcgcattgtt tgtcctggag aagaaatttg gaatccagct gaaggaaatc gacaaagaag 240
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 tgagacatgc ctcttgggtg acgtgagaaa actcttactt acgagtttgt aaagcagaaa 480
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 gagacgntcg tgantggant gacagtctat ggaanctga gatgaccctt ngatcgcntn 660
 gatcgtctca cgttaaacga gagccggcgt taacgaggac ccgattggaa ttgagattac 720
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<210> 560

<211> 446

<212> DNA

<213> *Mus musculus*

<400> 560

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 aagctgggtg ccccgccctg aagtgggaaga caatgctgtc agattgtgct cacgttggtg 180
 atagcgctct agcaacatic accttcggg gaggttctaa taaataaccc aaggaatttt 240
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 tctgtctgtt ttcttcaca tgaattata tgtcataagt gtctgctaa ttgtagatgt 360
 ttacttactt ttgttacctt aatgttttag agtctataaa atcagagggt atgtattttt 420
 agctacctgt ttaagtctta atgac 446

<210> 561

<211> 379

<212> DNA

<213> *Mus musculus*

<400> 561

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 ttacaggga cctgacagct gagaatgtct ttgtgaatcc agaggatctg agccaggatga 120
 ccctgggtgg ctatggcttc acctaccgat actgcccagg tggcaaacac gtggcctaca 180
 aagaaggcag caggagtcca cacgatggg acttggagtt catacatgga cctgcacaag 240
 ggatgcggac ctcccgccgc agcgatctcc agaccttggg ctactgtaig ctcaagtggc 300
 tttatgggtc ctgcatggac aaattcctc caacaccgan aaatactagg cagaacagaa 360
 gtattggaça gcccagcgc 379

<210> 562

<211> 503

<212> DNA

<213> *Mus musculus*

<400> 562

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acctcatcat ggacacgctg gcttcccttg ctctggctac ggaaccaccc accgagtcac 180
tcctgcttcg gaagccitat ggtagaaata agcctctcat ctacgcacg atgatgaaga 240
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attacaccat cgtgttcaat accggggtgt tgatgcagct ctccaatgag atggacgcgc 420
ggaatattct cgtggagaga tatgtgtttt aaggaatctg caataacgtc atcgtctgca 480
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503

<210> 563

<211> 501

<212> DNA

<213> *Mus musculus*

<400> 563

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gttccgtggc aacacttgga ccctgtagag aaggcccttg gagatgcaaa gctggacaat 120
tcacggatca atgaaatggt cttgttgggt ggtctacagg attccccagg attcggaac 180
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aggatttcgc tgctcttgaa tgacacccct ttttcccttg atattgacac tgctggcgga 360
gtcaagaagt gtccataaa ggcatatac cactatccac acaaggcaga cagagttttt 420

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caacatttct ctgacaacag ccgtgtatac acattagggt tatgatgita aaggccatca 480
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<210> 564

<211> 446

<212> DNA

<213> *Mus musculus*

<400> 564

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aagtacgaga ccaagtacgg gcccttgtaa cctgtgcccc tgccccgcag cactgcctgc 240
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atgggcacat ggtggcgtac ctgctctagg agcactcag tctcagcttc attataacat 360
ggccagcaca tgtgatgact tccccagggg accaagatcc tctccgatgg ggaacatgag 420
cgaatctacg tagacgggta aatggc 446

<210> 565

<211> 168

<212> DNA

<213> *Mus musculus*

<400> 565

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aagtgttate aggcagatcc caggctgact gtgctgtcct gattagtgc agctggtaga 120
tggaagaatt tgaatgctgg ctatctccaa gaatcggagc agactccg 168

<210> 566

<211> 270

<212> DNA

<213> *Mus musculus*

<400> 566

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ggcagittatc aaagagaaga tggaggagaa gaggggcgtc ttcaatgttc agatggagcc 180
caaagtggtc acagatacag atgagactga acttgcaagg cagctggaac ggctggagag 240
agaaaaatgca gaagtggatg gagatgatga                               270

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<210> 567

<211> 602

<212> DNA

<213> *Mus musculus*

<400> 567

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aagaattgat ggcttccctg gaccagccga cacagactgt ggtgatgcac cgtactgagc 300
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tcagacagcc tactgagttc tcacttcagt cacgtgtgac agacatctag cgttttgccc 540
tacatcaccg agtcattaaa gatctgttga gaatttaaaa gaagaaaaaa aaaaaacat 600
cg                                                                 602

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<210> 568

<211> 463

<212> DNA

<213> Mus musculus

<400> 568

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 gtgggacgag ctgaaaggat gggcctggct atttccttgg tggcaaccga gaaagaaaag 180
 gtttgggtatc atgtatgtag caaccgtggg aagggatgct ataacactag actcaaggaa 240
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<210> 569

<211> 3396

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (49).. (1044)

<400> 569

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Met Phe Gly

1

ctg cgg aga aac gcg gtc atc ggc ttg aac ctg tac tgc ggc ggc gcc 105

Leu Arg Arg Asn Ala Val Ile Gly Leu Asn Leu Tyr Cys Gly Gly Ala
 5 10 15
 agc ctc ggc gcg ggc ggc ggt tct ccg gca ggg gcg cgc ctg gtg gcc 153
 Ser Leu Gly Ala Gly Gly Gly Ser Pro Ala Gly Ala Arg Leu Val Ala
 20 25 30 35
 gag gag gcc aag gcg cgg cgc gag ggg gga ggg gag gcc gcc ctg ctg 201
 Glu Glu Ala Lys Ala Arg Arg Glu Gly Gly Gly Glu Ala Ala Leu Leu
 40 45 50
 ccc ggc gcg cgg gtg gtc gcc cgg ccg ccg ccc gtg ggc gcc gag gac 249
 Pro Gly Ala Arg Val Val Ala Arg Pro Pro Pro Val Gly Ala Glu Asp
 55 60 65
 ccc gac gtc acc gcg tcg gcc gaa agg cgg ctg cat aag tcg ccc ggc 297
 Pro Asp Val Thr Ala Ser Ala Glu Arg Arg Leu His Lys Ser Pro Gly
 70 75 80
 ctc ctc gcc gtg ccg ccc gag gag atg gcc gcg tcg gcc gcc gcc gcc 345
 Leu Leu Ala Val Pro Pro Glu Glu Met Ala Ala Ser Ala Ala Ala Ala
 85 90 95
 atc gtg tct ccg gag gag gaa ctg gac ggc tgc gag ccg gag gcc atc 393
 Ile Val Ser Pro Glu Glu Glu Leu Asp Gly Cys Glu Pro Glu Ala Ile
 100 105 110 115
 ggc aag cgc ccg gcc gtg ctg ccc ctc ctg gag cgc gtg agc gag gcg 441
 Gly Lys Arg Pro Ala Val Leu Pro Leu Leu Glu Arg Val Ser Glu Ala
 120 125 130
 gcc aag agc tcc ggg gcc gac ggc tct ctg ccc tcc acg ccg ccg ccg 489
 Ala Lys Ser Ser Gly Ala Asp Gly Ser Leu Pro Ser Thr Pro Pro Pro
 135 140 145
 ccc gag gag gaa gag gac gac cta tac cgc cag tcg ctg gag atc atc 537
 Pro Glu Glu Glu Glu Asp Asp Leu Tyr Arg Gln Ser Leu Glu Ile Ile
 150 155 160

tcg cgc tac ttg cgg gag cag gcg acc ggc tcc aag gac tcg aag cct 585
 Ser Arg Tyr Leu Arg Glu Gln Ala Thr Gly Ser Lys Asp Ser Lys Pro
 165 170 175
 ctg ggc gag gcg ggc gcg gcg ggc cgg aga gcg ctg gag acc ctg cgg 633
 Leu Gly Glu Ala Gly Ala Ala Gly Arg Arg Ala Leu Glu Thr Leu Arg
 180 185 190 195
 cgc gtg ggc gac ggc gtg cag cgc aac cac gag acg gcc ttc cag ggc 681
 Arg Val Gly Asp Gly Val Gln Arg Asn His Glu Thr Ala Phe Gln Gly
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 atg ctc cgg aaa ctg gac att aaa aac gaa ggc gat gtt aaa tct ttt 729
 Met Leu Arg Lys Leu Asp Ile Lys Asn Glu Gly Asp Val Lys Ser Phe
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 tct cga gta atg gtc cat gtt ttc aaa gat ggc gta aca aac tgg ggc 777
 Ser Arg Val Met Val His Val Phe Lys Asp Gly Val Thr Asn Trp Gly
 230 235 240
 agg att gtg act ctt att tct ttc ggt gcc ttt gtg gcc aaa cac tta 825
 Arg Ile Val Thr Leu Ile Ser Phe Gly Ala Phe Val Ala Lys His Leu
 245 250 255
 aag agc gta aac caa gaa agc ttc atc gaa cca tta gca gaa act atc 873
 Lys Ser Val Asn Gln Glu Ser Phe Ile Glu Pro Leu Ala Glu Thr Ile
 260 265 270 275
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 Thr Asp Val Leu Val Arg Thr Lys Arg Asp Trp Leu Val Lys Gln Arg
 280 285 290
 ggc tgg gat ggg ttt gtg gag ttc ttc cac gta cag gac cta gaa ggc 969
 Gly Trp Asp Gly Phe Val Glu Phe Phe His Val Gln Asp Leu Glu Gly
 295 300 305
 ggc atc aga aat gtg ctg ctg gct ttt gcg ggt gtt gct gga gta ggg 1017
 Gly Ile Arg Asn Val Leu Leu Ala Phe Ala Gly Val Ala Gly Val Gly

310	315	320	
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Ala Gly Leu Ala Tyr Leu Ile Arg			
325	330		
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 cactttaaca gctgttcccg aaagggttag gaccaactgc aagttaatgt gggttgtaaa 3344
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<210> 570

<211> 331

<212> PRT

<213> Mus musculus

<400> 570

Met	Phe	Gly	Leu	Arg	Arg	Asn	Ala	Val	Ile	Gly	Leu	Asn	Leu	Tyr	Cys
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Gly	Gly	Ala	Ser	Leu	Gly	Ala	Gly	Gly	Gly	Ser	Pro	Ala	Gly	Ala	Arg
			20					25					30		
Leu	Val	Ala	Glu	Glu	Ala	Lys	Ala	Arg	Arg	Glu	Gly	Gly	Gly	Glu	Ala
		35					40					45			
Ala	Leu	Leu	Pro	Gly	Ala	Arg	Val	Val	Ala	Arg	Pro	Pro	Pro	Val	Gly
	50						55					60			

Ala Glu Asp Pro Asp Val Thr Ala Ser Ala Glu Arg Arg Leu His Lys
65 70 75 80
Ser Pro Gly Leu Leu Ala Val Pro Pro Glu Glu Met Ala Ala Ser Ala
85 90 95
Ala Ala Ala Ile Val Ser Pro Glu Glu Glu Leu Asp Gly Cys Glu Pro
100 105 110
Glu Ala Ile Gly Lys Arg Pro Ala Val Leu Pro Leu Leu Glu Arg Val
115 120 125
Ser Glu Ala Ala Lys Ser Ser Gly Ala Asp Gly Ser Leu Pro Ser Thr
130 135 140
Pro Pro Pro Pro Glu Glu Glu Glu Asp Asp Leu Tyr Arg Gln Ser Leu
145 150 155 160
Glu Ile Ile Ser Arg Tyr Leu Arg Glu Gln Ala Thr Gly Ser Lys Asp
165 170 175
Ser Lys Pro Leu Gly Glu Ala Gly Ala Ala Gly Arg Arg Ala Leu Glu
180 185 190
Thr Leu Arg Arg Val Gly Asp Gly Val Gln Arg Asn His Glu Thr Ala
195 200 205
Phe Gln Gly Met Leu Arg Lys Leu Asp Ile Lys Asn Glu Gly Asp Val
210 215 220
Lys Ser Phe Ser Arg Val Met Val His Val Phe Lys Asp Gly Val Thr
225 230 235 240
Asn Trp Gly Arg Ile Val Thr Leu Ile Ser Phe Gly Ala Phe Val Ala
245 250 255
Lys His Leu Lys Ser Val Asn Gln Glu Ser Phe Ile Glu Pro Leu Ala
260 265 270
Glu Thr Ile Thr Asp Val Leu Val Arg Thr Lys Arg Asp Trp Leu Val
275 280 285
Lys Gln Arg Gly Trp Asp Gly Phe Val Glu Phe Phe His Val Gln Asp

290	295	300
Leu Glu Gly Gly Ile Arg Asn Val Leu Leu Ala Phe Ala Gly Val Ala		
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325	330	

<210> 571

<211> 587

<212> DNA

<213> Mus musculus

<400> 571

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aggtcagcgc cacagaactc atgaatatcc tcaacaaggt cgtgaccoga caccggatc 180
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acaccacagg caagctgggc ttigaggagt tcaaatacct ctggaacaac attaaaaagt 300
ggcaggctat atacaaacgc ttigatactg accgatcagg gactatcggg agccatgaac 360
ttccaggggc ctttgaggca gcaggattcc acctgaatga gcatctctac agcatgatca 420
tccggcgcta cgcagatgag agcgggaaca tggatttcga taacttcac agctgcttgg 480
tcaggctaga tgccatgttc cgcgcttttc aaactcttga ccaaaatggc acggaccaga 540
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<210> 572

<211> 886

<212> DNA

<213> Mus musculus

<400> 572

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 tacgagcaac tcaaggacga gtggaaccgg aagaaccga accttagtaa atgtggagaa 180
 gaactgggcc gcctgaagtt ggttctgctt gagctcaatc tcctcttcct gctatctcag 240
 aaccgagtgg ctgagttcca cacagaatta gaacgattac ctgccaagga catccagacc 300
 aatgtctaca tcaaacaccc tgtttccctc gagcaatacc tcatggaggg tagctacaac 360
 aaggatttcc tggctaaggg gaacatcctg ccgaaagcta acctcttcat tgcattctgct 420
 ggatacgatc aggatgaaac gcaggatgca ttgagaggct atgagaaatc tttttgctga 480
 gtactggatc tcttcttaga caccanaaga tgcagctatg ccagaagcga gttggtgctg 540
 ccctacnact atacagcttg cagcacacag agcagagcag agatcgntta tgactgcaac 600
 gagtatggta tccggagctg aataatgcta gcttcaaggc gtgattgtgc acaaccattt 660
 cggcctatta gggctccctaa aaaaaaaaaat ggcgaintcc ttggggattt gcccggtta 720
 ccggtgacaa ggtcggngn gcgagcttgg accccgggc ggggtaggg cgccgggagg 780
 aggccgtctg agaggggggc gtgggcgcgg cggggtcggc tcgctctcgt cggtggatca 840
 aggggngtg gtgggtgcca cgttgtggga aatgcgctgg gtgatg 886

<210> 573

<211> 611

<212> DNA

<213> Mus musculus

<400> 573

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 agaaaaatag ttcgagagaa gaaaatttta gaagttcata ttgataaagg catgaaagat 120
 ggtcagaaga taacattcca cggatgaagga gaccaagaac caggactgga gccaggagat 180
 attatcattg tgttagatca gaaggaccat gctgttttac aaggcgagga gaagaccttt 240
 tcatgtgtat ggacatacag ctggttgaag cattgtgcgg cttccaaaag ccaatatcta 300
 ctcttgacaa ccgattcata gtcattacct ctcatccagg tcagattgtc aagcatgggg 360
 atataaaatg tgtgctaaat gaaggtatgc caataaccg tcggccatat gaaaaggagc 420

gtctaatacat tgagttttaag gtagactttc ctgaaaatgg ctttctctct cctgataaac 480
 tctcttttgct ggaaaaactc cttcctgaaa gaaggaagta gaagagactg atgaaatgga 540
 tcaggtagac tggtaggactt tgaatcaaatac aggaagacgg cgcattataa tggagaacgt. 600
 ataggatgtg a 611

<210> 574

<211> 580

<212> DNA

<213> Mus musculus

<400> 574

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 gaggcagccg cgccccggcg cgtgctctgt atgccgcggt ctcgccggcg agcctgcctg 120
 atagtctgag ccggagagcc gccgcccggc cggttaatgt ggttgggtcg gggctgagca 180
 ggccaccaag atgcctcagt ccaagtcgcc gaagatcgcc atcctgggct accggtctgt 240
 gggaaagtcc tcattgacaa ttcagtttgt tgaaggccaa ttgtttgatt cctacgatcc 300
 aaccatagag aacacgttca ccaagttgat cacggtaaata ggtcaagagt atcatcttca 360
 gcttgtagac acagcggggc aggatgaata ttccattttt cctcagacat actccataga 420
 tattaatggg tatattcttg tgtattctgt tacatcaatac aaaagttttg aagtaattaa 480
 agttatccat ggcaagttgt tggatatggg ggggaaagtg cagataccta ttatgtttgt 540
 tggaaataag aaggacctgc atatgnnnaa ggtgatagct 580

<210> 575

<211> 625

<212> DNA

<213> Mus musculus

<400> 575

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ctaatttggga agccttcaca gcggataaag atactgctat taccagtgat aaaccagctg 120
 ctgcagtcgg aatggctggt agttttaccg atgctgaaag aagaaagtgt gaagaagaac 180
 ttgctaaatt gtataaacag ctigtatgaca aggatgaaga gattaaccaa caaagccaat 240
 tggtagagaa attgaagaca caaatgctgg atcaggaaga gcttctggca tcaaccagaa 300
 gggatcaaga taatatgcaa gctgaactga atgcctcca agcagaaaat gatgcttcta 360
 aagacgaagt caaagaagtt ttacaggcct tagaggaact ggctgittaat tatgatcaga 420
 agtctcagga agttgaagac caaacaagg aatatgaatt gcttagtgat gaattgaatc 480
 aaaatctgca acttiagcaa gtattgatgc tgagcttcag aagctgaagg gaatgaccac 540
 ccaccagnna gaacgagcag ctgaaatgat ggcatcatta tagcagacct tgcgagaata 600
 ggattgctgt ggnnataacg atgta 625

<210> 576

<211> 490

<212> DNA

<213> *Mus musculus*

<400> 576

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 tgactgcaac gccaaagcct atcctatagc ggcgcgccac agccactcaa accagccaca 180
 gctccccggc aaccgaacca tgaacaccga aatgtatcag acccccatgg aggtggcggt 240
 ctatcagctg cacaatttct ccatctcctt cttttcttct ctgcttggag gggatgttgt 300
 ttccggtaaa ctggataaca gtgcctccgg agccagtgtt gtggccctag acaacaagat 360
 tgagcaagcc atggaactcg ttaagaacca actgatgtaa gctgttaaaa aagaagtga 420
 agtccittaag gagcagaatc gttaactccc ttagaccccc ccccccccc cccccccaaa 480
 caaccttctt 490

<210> 577

<211> 468

<212> DNA

<213> Mus musculus

<400> 577

accatcatag cctttgccig ggaacccaat ggcagtaagt ttgccgigct tcatggtgag 60
 gcccctcgga tctctgicic ctcttaccac gtgaagagca acgggaagat tgaactcatc 120
 aagatgttig acaagcagca agccaacacc atcttctgga gtccccaggg gcagttcgtg 180
 gtgctggccg ggctgaggag catgaacggt gccttggcgt tatgtcgaca cttcagactg 240
 caccgtcatg aacattgcag aactacatg gcctccgatg ttgaatggga cccaactggc 300
 cgctacgttg ttacctctgt gtctgtgttg accacaaggt ggacaatgct tactggctgt 360
 ggaccttcca aggtcgctt ctgcagaaga acaacaagga ccgcttctgc cagctgctct 420
 ggagaccaag gcccacaacac tctcagcca ggatcagata aagcaaat 468

<210> 578

<211> 565

<212> DNA

<213> Mus musculus

<400> 578

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 cgtagtcgga cacgtagatt cggcgagagt caccagaacc ggccacctga tctacaaatg 120
 tgggtggaatc gacaagcgag gcatcgaaaa gtttgagaag gaggtgctg agatggcgag 180
 ggctcttcaa gtacgcctgg gtcttagaca aactgaaagc tgaacgtgac tggcgtatca 240
 gtattgagat ctcctgttag aaattcgaga ccagcagtac tatgtgacca tcattgatgc 300
 cccgagacac cagagacttc atcaagaaca tgattacagg cacatcccaa ggctgactgg 360
 tgctgtcctg attgttgctg ctagtattgg tgaatgtgaa gccgtgatgt ccgagagcgg 420
 gcaggcccg gcacatgctc ttgctggtgt aagcctcgag tgtgaaccac tgattgttgg 480
 gttcagagag tgggttgccg cgagcccgat acggtcggac aggtacagga aatcttgagg 540
 agtgagcaac gacatgagag aattg 565

<210> 579

<211> 523

<212> DNA

<213> Mus musculus

<400> 579

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 aaggttattg acccagtggc cccacggtag gttgcattgc tgaagaagga agtcgtccca 120
 gtgaatgtcc tggatgcgca ggaggagatg aaggaagtag ccagacaccc caagaatcct 180
 gatgttgggt tgaagccigt gtggtacagt cccaaggitt tcatagaagg ggccgatgca 240
 gagactttct cagaggggtga gatggtcaca ttataaaact gcggcaacat caacattact 300
 aaaatacacc aaaatgccgg atggaagaat tacatctcta gatgcaaatt gaatttggag 360
 aacaaagact acaagaacag taccaagatc acttggcttg ctagagcaca cagctctcc 420
 gaatccagcc gtccgattca cttatgggca ctttgtcagc aagcattgct gggacaagat 480
 agggcttcaa gcagtacttc acaaggccgt aagctgagga cta 523

<210> 580

<211> 289

<212> DNA

<213> Mus musculus

<400> 580

tcggcgctg cgtactaaga cccgtgtgca gcagcggcgg cggcgctaga ggcgcgcgcg 60
 gcggcgcgcg cacacgagta gcgggttcgg aggcagcagt tgggctcgcg gcgagggacc 120
 aggtcaagtc agtgcgttcg ccgagttgga atcggagctc cttaaatggc agatgatttg 180
 gacttcgaga caggagaatc aggggcctca gccaaacttc caatgcagtg ctcagcatta 240
 cgtaagaaat ggttttgggt gtgctcaaaa ggccggccaa tgtaagatc 289

<210> 581

<211> 1928

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (134).. (1108)

<400> 581

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cggcgggcgcg gag atg tgg ccc ttg gcg gcg gcg ctg ttg ctg ggc tcc 169
      Met Trp Pro Leu Ala Ala Ala Leu Leu Leu Gly Ser
              1              5              10
tgc tgc tgc ggt tca gct caa cta ctg ttt agt aac gtc aac tcc ata 217
Cys Cys Cys Gly Ser Ala Gln Leu Leu Phe Ser Asn Val Asn Ser Ile
      15              20              25
gag ttc act tca tgc aat gaa act gtg gtc atc cct tgc atc gtc cgt 265
Glu Phe Thr Ser Cys Asn Glu Thr Val Val Ile Pro Cys Ile Val Arg
      30              35              40
aat gtg gag gcg caa agc acc gaa gaa atg ttt gtg aag tgg aag ttg 313
Asn Val Glu Ala Gln Ser Thr Glu Glu Met Phe Val Lys Trp Lys Leu
      45              50              55              60
aac aaa tcg tat att ttc atc tat gat gga aat aaa aat agc act act 361
Asn Lys Ser Tyr Ile Phe Ile Tyr Asp Gly Asn Lys Asn Ser Thr Thr
      65              70              75
aca gat caa aac ttt acc agt gca aaa atc tca gtc tca gac tta atc 409
Thr Asp Gln Asn Phe Thr Ser Ala Lys Ile Ser Val Ser Asp Leu Ile

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80	85	90	
aat ggc att gcc tct ttg aaa atg gat aag cgc gat gcc atg gtg gga	457		
Asn Gly Ile Ala Ser Leu Lys Met Asp Lys Arg Asp Ala Met Val Gly			
95	100	105	
aac tac act tgc gaa gtg aca gag tta tcc aga gaa ggc aaa aca gtt	505		
Asn Tyr Thr Cys Glu Val Thr Glu Leu Ser Arg Glu Gly Lys Thr Val			
110	115	120	
ata gag ctg aaa aac cgc acg gcc ttc aac act gac caa gga tca gcc	553		
Ile Glu Leu Lys Asn Arg Thr Ala Phe Asn Thr Asp Gln Gly Ser Ala			
125	130	135	140
tgt tct tac gag gag gag aaa gga ggt tgc aaa tta gtt tcg tgg ttt	601		
Cys Ser Tyr Glu Glu Glu Lys Gly Gly Cys Lys Leu Val Ser Trp Phe			
145	150	155	
tct cca aat gaa aag atc ctc att gtt att ttc cca att ttg gct ata	649		
Ser Pro Asn Glu Lys Ile Leu Ile Val Ile Phe Pro Ile Leu Ala Ile			
160	165	170	
ctc ctg ttc tgg gga aag ttt ggt att tta aca ctc aaa tat aaa tcc	697		
Leu Leu Phe Trp Gly Lys Phe Gly Ile Leu Thr Leu Lys Tyr Lys Ser			
175	180	185	
agc cat acg aat aag aga atc att ctg ctg ctc gtt gcc ggg ctg gtg	745		
Ser His Thr Asn Lys Arg Ile Ile Leu Leu Leu Val Ala Gly Leu Val			
190	195	200	
ctc aca gtc atc gtg gtt gtt gga gcc atc ctt ctc atc cca gga gaa	793		
Leu Thr Val Ile Val Val Val Gly Ala Ile Leu Leu Ile Pro Gly Glu			
205	210	215	220
aag ccc gtg aag aat gct tct gga ctt ggc ctc att gta atc tct acg	841		
Lys Pro Val Lys Asn Ala Ser Gly Leu Gly Leu Ile Val Ile Ser Thr			
225	230	235	
ggg ata tta ata cta ctt cag tac aat gtg ttt atg aca gct ttt gga	889		

Gly Ile Leu Ile Leu Leu Gln Tyr Asn Val Phe Met Thr Ala Phe Gly
 240 245 250
 atg acc tct ttc acc att gcc ata ttg atc act caa gtg ctg ggc tac 937
 Met Thr Ser Phe Thr Ile Ala Ile Leu Ile Thr Gln Val Leu Gly Tyr
 255 260 265
 gtc ctt gct ttg gtc ggg ctg tgt ctc tgc atc atg gca tgt gag cca 985
 Val Leu Ala Leu Val Gly Leu Cys Leu Cys Ile Met Ala Cys Glu Pro
 270 275 280
 gtg cac ggc ccc ctt ttg att tca ggt ttg ggg atc ata gct cta gca 1033
 Val His Gly Pro Leu Leu Ile Ser Gly Leu Gly Ile Ile Ala Leu Ala
 285 290 295 300
 gaa cta ctt gga tta gtt tat atg aag ttt gtc gct tcc aac cag agg 1081
 Glu Leu Leu Gly Leu Val Tyr Met Lys Phe Val Ala Ser Asn Gln Arg
 305 310 315
 act atc caa cct cct agg aat agg tga aggggaagtga cggactgtaa 1128
 Thr Ile Gln Pro Pro Arg Asn Arg
 320 325
 cttggaagtc agaaatggaa gaatacagtt gtctaagcac caggctctica cgactcacag 1188
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 tgcaccccag ttttgaatac attttttttg caccctgtcc cgttctgcta ctttgatttg 1788
 cgttatgata tatatatata tatataatac cttttctcct ctttaaacad ggtcctgtga 1848

cacaatagtc agttgcagaa aggagccaga cttattcgca aagcactgtg ctcaaactct 1908
 tcagaaaaaa aaaaaaaaaa 1928

<210> 582

<211> 324

<212> PRT

<213> Mus musculus

<400> 582

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 Cys Asn Glu Thr Val Val Ile Pro Cys Ile Val Arg Asn Val Glu Ala
 35 40 45
 Gln Ser Thr Glu Glu Met Phe Val Lys Trp Lys Leu Asn Lys Ser Tyr
 50 55 60
 Ile Phe Ile Tyr Asp Gly Asn Lys Asn Ser Thr Thr Thr Asp Gln Asn
 65 70 75 80
 Phe Thr Ser Ala Lys Ile Ser Val Ser Asp Leu Ile Asn Gly Ile Ala
 85 90 95
 Ser Leu Lys Met Asp Lys Arg Asp Ala Met Val Gly Asn Tyr Thr Cys
 100 105 110
 Glu Val Thr Glu Leu Ser Arg Glu Gly Lys Thr Val Ile Glu Leu Lys
 115 120 125
 Asn Arg Thr Ala Phe Asn Thr Asp Gln Gly Ser Ala Cys Ser Tyr Glu
 130 135 140
 Glu Glu Lys Gly Gly Cys Lys Leu Val Ser Trp Phe Ser Pro Asn Glu
 145 150 155 160

Lys Ile Leu Ile Val Ile Phe Pro Ile Leu Ala Ile Leu Leu Phe Trp
 165 170 175
 Gly Lys Phe Gly Ile Leu Thr Leu Lys Tyr Lys Ser Ser His Thr Asn
 180 185 190
 Lys Arg Ile Ile Leu Leu Leu Val Ala Gly Leu Val Leu Thr Val Ile
 195 200 205
 Val Val Val Gly Ala Ile Leu Leu Ile Pro Gly Glu Lys Pro Val Lys
 210 215 220
 Asn Ala Ser Gly Leu Gly Leu Ile Val Ile Ser Thr Gly Ile Leu Ile
 225 230 235 240
 Leu Leu Gln Tyr Asn Val Phe Met Thr Ala Phe Gly Met Thr Ser Phe
 245 250 255
 Thr Ile Ala Ile Leu Ile Thr Gln Val Leu Gly Tyr Val Leu Ala Leu
 260 265 270
 Val Gly Leu Cys Leu Cys Ile Met Ala Cys Glu Pro Val His Gly Pro
 275 280 285
 Leu Leu Ile Ser Gly Leu Gly Ile Ile Ala Leu Ala Glu Leu Leu Gly
 290 295 300
 Leu Val Tyr Met Lys Phe Val Ala Ser Asn Gln Arg Thr Ile Gln Pro
 305 310 315 320
 Pro Arg Asn Arg

<210> 583

<211> 826

<212> DNA

<213> Mus musculus

<400> 583

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ggactactgt accagaatga aggaaaacca gaagcacatc tatittatca caggtgagac 120
 caaggaccag gttgctaact cgcctttgt ggaacgtctc cgaaagcatg gcttagaagt 180
 aatttatatg attgagccca ttgatgagta ttgtgtgcaa cagctgaagg aatttgaggg 240
 caagaccttg gtgtctgtta ccaaagaagg actggaactt ccagaagatg aagaggaaaa 300
 gaagaaacag gaagagaaaa agacaaaatt tgagaacctc tgcaaaatta tgaaggatat 360
 tttggagaag aaggttgaaa aggtggttgt gtcaaaccga ctggtgacat ccccgctgtg 420
 tattgtcaca agcacatatg gttggacagc aaacatggag agaataatga aagctcaagc 480
 ccicagagac aactcaacaa tgggttacat ggcagcaaag aaacacctgg agataaatcc 540
 tgatcactcc attattgaaa ccttaaggca aaaggcagag gctgacaaga atgacaaatc 600
 tgtgaaggat ctggtcatct tgctgtatga aactgcactc ctatcttctg gcttcagtct 660
 ggaagatccc cagacccatg ctaacaggat ctacaggatg atcaagcttg gtctaggtat 720
 tgatgaggat gatcctactg tggatgacac cagtgtgtgt gtaactgaag aaatgcctcc 780
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<210> 584

<211> 1595

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (194).. (1051)

<400> 584

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 cgatagtcag tggctgcgga cgagccctcg ggggtgcgag cgtgaccgcg gccaaagccc 120
 cgcgtgcct tctgcggcga gtagggcctc gcggcgatcat cggcggcgag tagccgtgc 180
 ggcctggccg acc atg tcg gac gcg gct gag gag cag ccc atg gag acg 229

Met Ser Asp Ala Ala Glu Glu Gln Pro Met Glu Thr

	1	5	10	
acg ggc gcc acc gag aac gga cac gag gcc gcc ccc gaa ggc gag gcc				277
Thr Gly Ala Thr Glu Asn Gly His Glu Ala Ala Pro Glu Gly Glu Ala				
	15	20	25	
ccg gtc gag ccc agc gcg gct gcc gcg gcc ccc gcg gcc tcg gcc ggg				325
Pro Val Glu Pro Ser Ala Ala Ala Ala Ala Pro Ala Ala Ser Ala Gly				
	30	35	40	
tct ggg ggc ggg acc acg acc gca ccg agc ggg aac cag aac ggc gcg				373
Ser Gly Gly Gly Thr Thr Thr Ala Pro Ser Gly Asn Gln Asn Gly Ala				
	45	50	55	60
gag ggc gac cag atc aac gcc agc aag aac gag gag gac gcg gga aaa				421
Glu Gly Asp Gln Ile Asn Ala Ser Lys Asn Glu Glu Asp Ala Gly Lys				
	65	70	75	
atg ttc gtt ggt ggt ctg agc tgg gat acc agc aaa aaa gac tta aag				469
Met Phe Val Gly Gly Leu Ser Trp Asp Thr Ser Lys Lys Asp Leu Lys				
	80	85	90	
gat tat ttt act aag ttt gga gag gtt gtt gac tgt aca ata aaa atg				517
Asp Tyr Phe Thr Lys Phe Gly Glu Val Val Asp Cys Thr Ile Lys Met				
	95	100	105	
gat ccc aac act gga cga tca aga ggg ttt ggg ttt att ctc ttc aaa				565
Asp Pro Asn Thr Gly Arg Ser Arg Gly Phe Gly Phe Ile Leu Phe Lys				
	110	115	120	
gat tct tct agt gtg gaa aag gtc tta gat cag aag gag cac agg ctg				613
Asp Ser Ser Ser Val Glu Lys Val Leu Asp Gln Lys Glu His Arg Leu				
	125	130	135	140
gat ggt cgt gtc att gac cct aaa aag gct atg gct atg aag aag gac				661
Asp Gly Arg Val Ile Asp Pro Lys Lys Ala Met Ala Met Lys Lys Asp				
	145	150	155	
cct gtg aag aaa atc ttt gtg gga ggt cta aac cct gaa gcc aca gag				709

Pro Val Lys Lys Ile Phe Val Gly Gly Leu Asn Pro Glu Ala Thr Glu
 160 165 170
 gaa aag atc aga gaa tac ttc ggc cag ttt ggg gag att gag gcc att 757
 Glu Lys Ile Arg Glu Tyr Phe Gly Gln Phe Gly Glu Ile Glu Ala Ile
 175 180 185
 gag ctt cca ata gat ccc aag ttg aac aaa aga cgg ggt ttt gtt ttt 805
 Glu Leu Pro Ile Asp Pro Lys Leu Asn Lys Arg Arg Gly Phe Val Phe
 190 195 200
 att aca ttt aaa gag gaa gat cct gtg aag aaa gtt ctg gag aag aaa 853
 Ile Thr Phe Lys Glu Glu Asp Pro Val Lys Lys Val Leu Glu Lys Lys
 205 210 215 220
 ttt cat act gtc agt gga agc aag tgt gaa atc aag gtt gcc cag ccc 901
 Phe His Thr Val Ser Gly Ser Lys Cys Glu Ile Lys Val Ala Gln Pro
 225 230 235
 aaa gag gtg tat cag caa cag cag tat ggc tct ggg ggc aga gga aat 949
 Lys Glu Val Tyr Gln Gln Gln Gln Tyr Gly Ser Gly Gly Arg Gly Asn
 240 245 250
 cgc aat cga ggg aac cga ggc agt ggt gga ggt cag ggt agt aca aat 997
 Arg Asn Arg Gly Asn Arg Gly Ser Gly Gly Gly Gln Gly Ser Thr Asn
 255 260 265
 tac gga aag agc cag cga cgt ggt ggt cat cag aat aac tac aag cca 1045
 Tyr Gly Lys Ser Gln Arg Arg Gly Gly His Gln Asn Asn Tyr Lys Pro
 270 275 280
 tac tga gaggcagcag gagcgccga gtgacgaccg cacacgcttt gtttgacgc 1101
 Tyr
 285
 ggagtgaaca caattatgta ccaaatttaa ctggcacaac ttttatggcc tgtcccatgt 1161
 gcatcttatt taaaatttcc ccagaaatc actctcctgt ttactattcc agagctctag 1221
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caggttaccc tgttctagat caggagggtc tatttcctgt tgccgctctg cagcctggac 1341
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 tgtacttttt ggtacctttt gggaatctaa tgtattgtaa ggtatittiac acgtgtcctg 1521
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 aaaaaaaaaa aaaa 1595

<210> 585

<211> 285

<212> PRT

<213> Mus musculus

<400> 585

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 Glu Asn Gly His Glu Ala Ala Pro Glu Gly Glu Ala Pro Val Glu Pro
 20 25 30
 Ser Ala Ala Ala Ala Ala Pro Ala Ala Ser Ala Gly Ser Gly Gly Gly
 35 40 45
 Thr Thr Thr Ala Pro Ser Gly Asn Gln Asn Gly Ala Glu Gly Asp Gln
 50 55 60
 Ile Asn Ala Ser Lys Asn Glu Glu Asp Ala Gly Lys Met Phe Val Gly
 65 70 75 80
 Gly Leu Ser Trp Asp Thr Ser Lys Lys Asp Leu Lys Asp Tyr Phe Thr
 85 90 95
 Lys Phe Gly Glu Val Val Asp Cys Thr Ile Lys Met Asp Pro Asn Thr
 100 105 110
 Gly Arg Ser Arg Gly Phe Gly Phe Ile Leu Phe Lys Asp Ser Ser Ser
 115 120 125

Val Glu Lys Val Leu Asp Gln Lys Glu His Arg Leu Asp Gly Arg Val
 130 135 140
 Ile Asp Pro Lys Lys Ala Met Ala Met Lys Lys Asp Pro Val Lys Lys
 145 150 155 160
 Ile Phe Val Gly Gly Leu Asn Pro Glu Ala Thr Glu Glu Lys Ile Arg
 165 170 175
 Glu Tyr Phe Gly Gln Phe Gly Glu Ile Glu Ala Ile Glu Leu Pro Ile
 180 185 190
 Asp Pro Lys Leu Asn Lys Arg Arg Gly Phe Val Phe Ile Thr Phe Lys
 195 200 205
 Glu Glu Asp Pro Val Lys Lys Val Leu Glu Lys Lys Phe His Thr Val
 210 215 220
 Ser Gly Ser Lys Cys Glu Ile Lys Val Ala Gln Pro Lys Glu Val Tyr
 225 230 235 240
 Gln Gln Gln Gln Tyr Gly Ser Gly Gly Arg Gly Asn Arg Asn Arg Gly
 245 250 255
 Asn Arg Gly Ser Gly Gly Gly Gln Gly Ser Thr Asn Tyr Gly Lys Ser
 260 265 270
 Gln Arg Arg Gly Gly His Gln Asn Asn Tyr Lys Pro Tyr
 275 280 285

<210> 586

<211> 2257

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (49).. (318)

<220>

<221> CDS

<222> (656).. (1363)

<400> 586

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Met Arg Gly

1

tgg gga gtg gaa gcg ggc acc tca ctg ggc agt cag agt ctc gct ggc 105

Trp Gly Val Glu Ala Gly Thr Ser Leu Gly Ser Gln Ser Leu Ala Gly

5

10

15

ctt gtc gat cac act ctg ggc ttt ggt ctt aag cgt ctc cag cat ggg 153

Leu Val Asp His Thr Leu Gly Phe Gly Leu Lys Arg Leu Gln His Gly

20

25

30

35

cat cag act atg gcg cag gtc ctc cag cgc agg tct ggc ttt ctc gcc 201

His Gln Thr Met Ala Gln Val Leu Gln Arg Arg Ser Gly Phe Leu Ala

40

45

50

aag tgt ctt cag gtg ggt ttt ggc cct ggt gtg gta ctc gtt caa ggt 249

Lys Cys Leu Gln Val Gly Phe Gly Pro Gly Val Val Leu Val Gln Gly

55

60

65

agg gtt gct ctt gag ctc agc cag gcg ctg ggc cag gct ctc gcg cat 297

Arg Val Ala Leu Glu Leu Ser Gln Ala Leu Gly Gln Ala Leu Ala His

70

75

80

ctg ttc gct gtg ggg cgc tag ctgtgtgcgc agagagtcta cgtgtgtgcg 348

Leu Phe Ala Val Gly Arg

85

90

catgcggtcg cgaaattcct cagccacagg ggacagtcctc ccttcagct cctgcagctt 408

ctggcgcgcg ctctcctgca gctcggcgcc cagaggcgcc accttctggc ggtagagctc 468

cagtctcatt taggcatgta gtgcatacac atacatgcaa gcaaaacact cataaactac 528
 aaattatattt ttaattaaaa aaaggaatcc tatttactac tagaaatgta agctcctctt 588
 ttatacgttg aggagtctat agcaaaataa aataggatat agaaaaaaaa gtcttgataa 648
 tcaacaa atg aat tat aaa att tat aaa aag gca aaa aag aca att tgc 697

Met Asn Tyr Lys Ile Tyr Lys Lys Ala Lys Lys Thr Ile Cys

95

100

caa aac agt ttt gga aat gaa gaa aag aaa aaa gag cct gca att tca 745

Gln Asn Ser Phe Gly Asn Glu Glu Lys Lys Lys Glu Pro Ala Ile Ser

105

110

115

120

tca cag aat agc cct gaa gca aga gaa gaa agt agt tcc agc agc aat 793

Ser Gln Asn Ser Pro Glu Ala Arg Glu Glu Ser Ser Ser Ser Ser Asn

125

130

135

gta agc agc aga aag gat gag aca aat gct cga gat aca tat gtt tca 841

Val Ser Ser Arg Lys Asp Glu Thr Asn Ala Arg Asp Thr Tyr Val Ser

140

145

150

tct ttt cct cgg gca cca agc act tct gat tct gtg cga tta aaa tgt 889

Ser Phe Pro Arg Ala Pro Ser Thr Ser Asp Ser Val Arg Leu Lys Cys

155

160

165

agg gag atg ctt gct gca gct ctt cgg aca gga gat gat tat gtt gca 937

Arg Glu Met Leu Ala Ala Ala Leu Arg Thr Gly Asp Asp Tyr Val Ala

170

175

180

att gga gct gat gaa gaa gaa ctg gga tct cag att gag gaa gct ata 985

Ile Gly Ala Asp Glu Glu Glu Leu Gly Ser Gln Ile Glu Glu Ala Ile

185

190

195

200

tat caa gaa ata agg aat aca gac atg aaa tac aaa aac aga gta cga 1033

Tyr Gln Glu Ile Arg Asn Thr Asp Met Lys Tyr Lys Asn Arg Val Arg

205

210

215

agt agg ata tca aat ctt aaa gat gca aag aat cca aat tta agg aaa 1081

Ser Arg Ile Ser Asn Leu Lys Asp Ala Lys Asn Pro Asn Leu Arg Lys

220	225	230	
aat gtg ctg tgt ggg aat att cct cct gat cta ttt gct aga atg aca			1129
Asn Val Leu Cys Gly Asn Ile Pro Pro Asp Leu Phe Ala Arg Met Thr			
235	240	245	
gca gag gaa atg gct agt gat gag ctc aaa gag atg agg aaa aac ctg			1177
Ala Glu Glu Met Ala Ser Asp Glu Leu Lys Glu Met Arg Lys Asn Leu			
250	255	260	
acc aaa gaa gcc atc agg gag cat cag atg gcc aag act ggt ggg acc			1225
Thr Lys Glu Ala Ile Arg Glu His Gln Met Ala Lys Thr Gly Gly Thr			
265	270	275	280
cag act gac ttg ttc act tgt ggc aaa tgt aaa aag aag aac tgc act			1273
Gln Thr Asp Leu Phe Thr Cys Gly Lys Cys Lys Lys Lys Asn Cys Thr			
285	290	295	
tat aca cag gtg caa act cgt agt gct gat gaa cca atg aca aca ttt			1321
Tyr Thr Gln Val Gln Thr Arg Ser Ala Asp Glu Pro Met Thr Thr Phe			
300	305	310	
gtt gta tgt aat gaa tgt gga aat cgg tgg aag ttc tgt tga			1363
Val Val Cys Asn Glu Cys Gly Asn Arg Trp Lys Phe Cys			
315	320	325	
gtttggaaga attggcaaag tatctggacc attaagaaaa actaattttg taattagctt			1423
taaaattaag ccaggcaact cgtttccttg caagtgaaat ttgtaaacaa catacatctc			1483
atgggttggt ctttgttggt cacctgacag tctgtcttaa atgccttctg tggctctcaga			1543
tcagctggga gaccataaaa taatgatata atgtgttgct ttgtttttct ctttcataag			1603
ttgatgttgc attttattaa atattaactt tttatagcct agaacacaaa aattttgttg			1663
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tcatttcttt tattttctcat acatatataa taccattttt taatagattt tactctgaaa			1963

acggacttgg tttatattat ttgactttgt gctatatatt agttttatag aactctgtta 2023
 taatttccta agcttttcat nnagcccacc acaggtatac ttctgatgaa ttgtcccca 2083
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<210> 587

<211> 89

<212> PRT

<213> Mus musculus

<400> 587

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Leu	Ala	Gly	Leu	Val	Asp	His	Thr	Leu	Gly	Phe	Gly	Leu	Lys	Arg	Leu
				20					25					30	
Gln	His	Gly	His	Gln	Thr	Met	Ala	Gln	Val	Leu	Gln	Arg	Arg	Ser	Gly
				35					40					45	
Phe	Leu	Ala	Lys	Cys	Leu	Gln	Val	Gly	Phe	Gly	Pro	Gly	Val	Val	Leu
				50					55					60	
Val	Gln	Gly	Arg	Val	Ala	Leu	Glu	Leu	Ser	Gln	Ala	Leu	Gly	Gln	Ala
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Leu	Ala	His	Leu	Phe	Ala	Val	Gly	Arg							
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<210> 588

<211> 235

<212> PRT

<213> Mus musculus

<400> 588

Met Asn Tyr Lys Ile Tyr Lys Lys Ala Lys Lys Thr Ile Cys Gln Asn
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 Ser Phe Gly Asn Glu Glu Lys Lys Lys Glu Pro Ala Ile Ser Ser Gln
 20 25 30
 Asn Ser Pro Glu Ala Arg Glu Glu Ser Ser Ser Ser Ser Asn Val Ser
 35 40 45
 Ser Arg Lys Asp Glu Thr Asn Ala Arg Asp Thr Tyr Val Ser Ser Phe
 50 55 60
 Pro Arg Ala Pro Ser Thr Ser Asp Ser Val Arg Leu Lys Cys Arg Glu
 65 70 75 80
 Met Leu Ala Ala Ala Leu Arg Thr Gly Asp Asp Tyr Val Ala Ile Gly
 85 90 95
 Ala Asp Glu Glu Glu Leu Gly Ser Gln Ile Glu Glu Ala Ile Tyr Gln
 100 105 110
 Glu Ile Arg Asn Thr Asp Met Lys Tyr Lys Asn Arg Val Arg Ser Arg
 115 120 125
 Ile Ser Asn Leu Lys Asp Ala Lys Asn Pro Asn Leu Arg Lys Asn Val
 130 135 140
 Leu Cys Gly Asn Ile Pro Pro Asp Leu Phe Ala Arg Met Thr Ala Glu
 145 150 155 160
 Glu Met Ala Ser Asp Glu Leu Lys Glu Met Arg Lys Asn Leu Thr Lys
 165 170 175
 Glu Ala Ile Arg Glu His Gln Met Ala Lys Thr Gly Gly Thr Gln Thr
 180 185 190
 Asp Leu Phe Thr Cys Gly Lys Cys Lys Lys Lys Asn Cys Thr Tyr Thr
 195 200 205
 Gln Val Gln Thr Arg Ser Ala Asp Glu Pro Met Thr Thr Phe Val Val

210	215	220
Cys Asn Glu Cys Gly Asn Arg Trp Lys Phe Cys		
225	230	235

<210> 589

<211> 1371

<212> DNA

<213> Mus musculus

<400> 589

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cgaacctgaa gacctggagg acctgtacag ccgctacaag aagctgcagc aggagctgga 180
gttcctggag gtncaggagg agtatatcaa ggacgagcag aagaacctga agaaggaatt 240
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cttgggaagt gtggatcaga acacagccat cgtggcctcc accacaggct ctaactatta 360
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gcagattggc atcgatcctc cccgaggtgt cctcatgtat ggccctcctg gctgtggaaa 660
gacaatgta gcaaaggctg tggcacatca cagcacagct gcatttatcc gtgtggtggg 720
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attcccactc cctgaccgtc gccagaagag gttagatttc tccacatca ccagcaaat 1080
gaacctctct gaggaggctg acctggaaga ctatgtggcc cgtccagata agatttcagg 1140

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agccgatatc aactccaict gtcaggcgcg tggaatgttg gctgtccgtg agaccgctta 1200
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 ggaacatgaa tittacaagt gacccctccc cacacttccc caggcacctg tcccaaaggc 1320
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<210> 590

<211> 540

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (19).. (333)

<400> 590

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 Met Lys Ser Leu Leu Pro Leu Ala Ile Leu Ala
 1 5 10
 gcg ctg gcc gtg gca acc ctg tgc tac gaa tct cac gaa agc atg gag 99
 Ala Leu Ala Val Ala Thr Leu Cys Tyr Glu Ser His Glu Ser Met Glu
 15 20 25
 tcc tat gaa atc agt ccc ttc atc aac agg aga aat gcc aac acc ttt 147
 Ser Tyr Glu Ile Ser Pro Phe Ile Asn Arg Arg Asn Ala Asn Thr Phe
 30 35 40
 atg tcc cct cag cag agg tgg cga gct aaa gcc caa aag aga gtc cag 195
 Met Ser Pro Gln Gln Arg Trp Arg Ala Lys Ala Gln Lys Arg Val Gln
 45 50 55
 gaa cgc aac aag cct gcc tac gag atc aac aga gag gcc tgc gat gac 243
 Glu Arg Asn Lys Pro Ala Tyr Glu Ile Asn Arg Glu Ala Cys Asp Asp

60	65	70	75	
tac aag ctg tgt gag cgc tac gcc atg gtc tac ggc tac aac gct gcc	291			
Tyr Lys Leu Cys Glu Arg Tyr Ala Met Val Tyr Gly Tyr Asn Ala Ala				
80	85	90		
tac aac cgc tac ttc agg cag cgc cga gga gcc aaa tat tag	333			
Tyr Asn Arg Tyr Phe Arg Gln Arg Arg Gly Ala Lys Tyr				
95	100	105		
cgcgaaagaaa cagtcatttg gttgtggagt ttctgtttat atctcctgca gtagcattac	393			
tgaagtatac agacacgcat gtgttgcttg ctcttacctat gatctcctag ctggctggcc	453			
cactccttcc ttctgcgggt tgaaagtaat gaaagaacag tattaagaag tgtgtttata	513			
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<210> 591

<211> 104

<212> PRT

<213> Mus musculus

<400> 591

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20 25 30	
Pro Phe Ile Asn Arg Arg Asn Ala Asn Thr Phe Met Ser Pro Gln Gln	
35 40 45	
Arg Trp Arg Ala Lys Ala Gln Lys Arg Val Gln Glu Arg Asn Lys Pro	
50 55 60	
Ala Tyr Glu Ile Asn Arg Glu Ala Cys Asp Asp Tyr Lys Leu Cys Glu	
65 70 75 80	
Arg Tyr Ala Met Val Tyr Gly Tyr Asn Ala Ala Tyr Asn Arg Tyr Phe	

85

90

95

Arg Gln Arg Arg Gly Ala Lys Tyr

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<210> 592

<211> 746

<212> DNA

<213> *Mus musculus*

<400> 592

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 aaccaggaga aactcgccaa actgcaggca caagtgcgca ttggtgggaa aggaactgct 180
 cgtaggaaga agaagggtgt tcacagaacg gccacagcag acgataagaa actgcagttc 240
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 aacaaatctg tggatgaaac gacgcttgct actgagagat gatgatgatg agtttagatc 540
 tgggtgagat ttgatgaggt tgtaaatga ngaagtgaat gaacgcgtgt cgagagcgat 600
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 ctggaattga gagttaactt cggatga 746

<210> 593

<211> 1812

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (53).. (1723)

<400> 593

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Met Glu

1

ggg cct ttg tcc gtg ttc ggg gac cgc agc act ggg gag gcg atc cgc 106

Gly Pro Leu Ser Val Phe Gly Asp Arg Ser Thr Gly Glu Ala Ile Arg

5

10

15

tcc cag aat gtt atg gct gca gct tct att gcc aac att gtt aaa agt 154

Ser Gln Asn Val Met Ala Ala Ala Ser Ile Ala Asn Ile Val Lys Ser

20

25

30

tct ctt ggg cca gtt ggc ttg gat aaa atg ttg gtg gat gat att ggt 202

Ser Leu Gly Pro Val Gly Leu Asp Lys Met Leu Val Asp Asp Ile Gly

35

40

45

50

gat gta acc att act aac gat ggt gcc acc atc ctg aag tta ctg gag 250

Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Leu Leu Glu

55

60

65

gta gaa cat ccc gca gcc aaa gtt ctg tgt gag ttg gct gac ctg caa 298

Val Glu His Pro Ala Ala Lys Val Leu Cys Glu Leu Ala Asp Leu Gln

70

75

80

gac aaa gaa gtt gga gat gga act acc tca gtg gta atc att gca gcg 346

Asp Lys Glu Val Gly Asp Gly Thr Thr Ser Val Val Ile Ile Ala Ala

85

90

95

gag ctt ctg aaa aat gca gat gag cta gtc aaa cag aaa att cat cca 394

Glu Leu Leu Lys Asn Ala Asp Glu Leu Val Lys Gln Lys Ile His Pro

100

105

110

aca tca gtt att agt ggc tat cgt ctt gcc tgc aag gaa gcg gtg cgt 442
 Thr Ser Val Ile Ser Gly Tyr Arg Leu Ala Cys Lys Glu Ala Val Arg
 115 120 125 130
 tat atc aat gag aac ctg att att aac gca gac gaa ctt gga aga gac 490
 Tyr Ile Asn Glu Asn Leu Ile Ile Asn Ala Asp Glu Leu Gly Arg Asp
 135 140 145
 tgt ctg acc aat act gct aag aca tcc atg tct tcc aaa att att gga 538
 Cys Leu Thr Asn Thr Ala Lys Thr Ser Met Ser Ser Lys Ile Ile Gly
 150 155 160
 ata aat ggt gat tac ttt gct aat atg gta gta gat gct gtg ctt gct 586
 Ile Asn Gly Asp Tyr Phe Ala Asn Met Val Val Asp Ala Val Leu Ala
 165 170 175
 gtt aaa tac aca gat gcc aga ggc cag cct cgc tat cca atc aat tct 634
 Val Lys Tyr Thr Asp Ala Arg Gly Gln Pro Arg Tyr Pro Ile Asn Ser
 180 185 190
 gtt aat att ctg aaa gcc cat ggg aga agt cag ata gaa agc atg ctg 682
 Val Asn Ile Leu Lys Ala His Gly Arg Ser Gln Ile Glu Ser Met Leu
 195 200 205 210
 atc aat ggc tat gcg ctc aat tgt gtg gtt gga tct cag ggc atg ccc 730
 Ile Asn Gly Tyr Ala Leu Asn Cys Val Val Gly Ser Gln Gly Met Pro
 215 220 225
 aag aga ata gtt aat gca aaa att gct tgt ctt gac ttc agc ctg cag 778
 Lys Arg Ile Val Asn Ala Lys Ile Ala Cys Leu Asp Phe Ser Leu Gln
 230 235 240
 aaa aca aaa atg aag ctt ggt gta cag gtg gtt att aca gac cct gag 826
 Lys Thr Lys Met Lys Leu Gly Val Gln Val Val Ile Thr Asp Pro Glu
 245 250 255
 aaa ttg gac caa att aga cag aga gaa tcg gat atc acc aag gag aga 874
 Lys Leu Asp Gln Ile Arg Gln Arg Glu Ser Asp Ile Thr Lys Glu Arg

260	265	270	
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Ile Gln Lys Ile Leu Ala Thr Gly Ala Asn Val Ile Leu Thr Thr Gly			
275	280	285	290
ggc att gat gat atg tgt ctc aag tat ttt gtg gaa gct ggt gcc atg	970		
Gly Ile Asp Asp Met Cys Leu Lys Tyr Phe Val Glu Ala Gly Ala Met			
295	300	305	
gct gtt agg aga gtt tta aaa cga gac ctg aag tgt gtt gca aaa gct	1018		
Ala Val Arg Arg Val Leu Lys Arg Asp Leu Lys Cys Val Ala Lys Ala			
310	315	320	
tct gga gca act atc ctg tct acg ctg gcc aat ttg gaa ggc gaa gaa	1066		
Ser Gly Ala Thr Ile Leu Ser Thr Leu Ala Asn Leu Glu Gly Glu Glu			
325	330	335	
act ttt gaa gtg acg atg ttg gga caa gcg gaa gag gtc gta cag gag	1114		
Thr Phe Glu Val Thr Met Leu Gly Gln Ala Glu Glu Val Val Gln Glu			
340	345	350	
aga att tgt gat gat gag ctg atc tta atc aaa aat act aag gct cgt	1162		
Arg Ile Cys Asp Asp Glu Leu Ile Leu Ile Lys Asn Thr Lys Ala Arg			
355	360	365	370
aca tct gct tca atc atc tta cga gga gca aat gat ttc atg tgt gat	1210		
Thr Ser Ala Ser Ile Ile Leu Arg Gly Ala Asn Asp Phe Met Cys Asp			
375	380	385	
gaa atg gag cgc tct tta cat gat gct ctt tgt gtg gtg aag aga gtt	1258		
Glu Met Glu Arg Ser Leu His Asp Ala Leu Cys Val Val Lys Arg Val			
390	395	400	
ttg gag tcg aaa tct gtg gtc cca ggt gga ggt gct gta gaa gct gcc	1306		
Leu Glu Ser Lys Ser Val Val Pro Gly Gly Gly Ala Val Glu Ala Ala			
405	410	415	
ctg tcc ata tac ctg gaa aac tat gca aca agc atg gga tct cgg gaa	1354		

Leu Ser Ile Tyr Leu Glu Asn Tyr Ala Thr Ser Met Gly Ser Arg Glu
 420 425 430
 cag ctt gct att gca gag ttt gca aga tct ctg ctt gtg att cct aat 1402
 Gln Leu Ala Ile Ala Glu Phe Ala Arg Ser Leu Leu Val Ile Pro Asn
 435 440 445 450
 aca ctg gca gtg aat gct gcc cag gac tcc acc gac ctg gtt gcc aag 1450
 Thr Leu Ala Val Asn Ala Ala Gln Asp Ser Thr Asp Leu Val Ala Lys
 455 460 465
 tta aga gct ttt cac aat gag gct caa gtg aac ccg gaa cgt aaa aat 1498
 Leu Arg Ala Phe His Asn Glu Ala Gln Val Asn Pro Glu Arg Lys Asn
 470 475 480
 cta aag tgg att ggt ctt gat ttg gtc cat ggg aaa cca cga gac aac 1546
 Leu Lys Trp Ile Gly Leu Asp Leu Val His Gly Lys Pro Arg Asp Asn
 485 490 495
 aag caa gca ggg gtc ttt gaa cca acc ata gtt aaa gtg aag agc ctg 1594
 Lys Gln Ala Gly Val Phe Glu Pro Thr Ile Val Lys Val Lys Ser Leu
 500 505 510
 aag ttc gca aca gag gct gca atc acc atc ctt cgg att gat gat ctg 1642
 Lys Phe Ala Thr Glu Ala Ala Ile Thr Ile Leu Arg Ile Asp Asp Leu
 515 520 525 530
 ata aaa tta cac cca gaa tgc aaa gac gat aaa cac gga agt tat gaa 1690
 Ile Lys Leu His Pro Glu Cys Lys Asp Asp Lys His Gly Ser Tyr Glu
 535 540 545
 aat gct gtt cac tct gga gcc ctt gat gac tga ttggatttcc ctgttattta 1743
 Asn Ala Val His Ser Gly Ala Leu Asp Asp
 550 555
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<210> 594

<211> 556

<212> PRT

<213> Mus musculus

<400> 594

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Lys Ser Ser Leu Gly Pro Val Gly Leu Asp Lys Met Leu Val Asp Asp
          35             40             45
Ile Gly Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Leu
          50             55             60
Leu Glu Val Glu His Pro Ala Ala Lys Val Leu Cys Glu Leu Ala Asp
          65             70             75             80
Leu Gln Asp Lys Glu Val Gly Asp Gly Thr Thr Ser Val Val Ile Ile
          85             90             95
Ala Ala Glu Leu Leu Lys Asn Ala Asp Glu Leu Val Lys Gln Lys Ile
          100            105            110
His Pro Thr Ser Val Ile Ser Gly Tyr Arg Leu Ala Cys Lys Glu Ala
          115            120            125
Val Arg Tyr Ile Asn Glu Asn Leu Ile Ile Asn Ala Asp Glu Leu Gly
          130            135            140
Arg Asp Cys Leu Thr Asn Thr Ala Lys Thr Ser Met Ser Ser Lys Ile
          145            150            155            160
Ile Gly Ile Asn Gly Asp Tyr Phe Ala Asn Met Val Val Asp Ala Val
          165            170            175
Leu Ala Val Lys Tyr Thr Asp Ala Arg Gly Gln Pro Arg Tyr Pro Ile

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180	185	190
Asn Ser Val Asn Ile Leu Lys Ala His Gly Arg Ser Gln Ile Glu Ser		
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Met Leu Ile Asn Gly Tyr Ala Leu Asn Cys Val Val Gly Ser Gln Gly		
210	215	220
Met Pro Lys Arg Ile Val Asn Ala Lys Ile Ala Cys Leu Asp Phe Ser		
225	230	235
Leu Gln Lys Thr Lys Met Lys Leu Gly Val Gln Val Val Ile Thr Asp		
245	250	255
Pro Glu Lys Leu Asp Gln Ile Arg Gln Arg Glu Ser Asp Ile Thr Lys		
260	265	270
Glu Arg Ile Gln Lys Ile Leu Ala Thr Gly Ala Asn Val Ile Leu Thr		
275	280	285
Thr Gly Gly Ile Asp Asp Met Cys Leu Lys Tyr Phe Val Glu Ala Gly		
290	295	300
Ala Met Ala Val Arg Arg Val Leu Lys Arg Asp Leu Lys Cys Val Ala		
305	310	315
Lys Ala Ser Gly Ala Thr Ile Leu Ser Thr Leu Ala Asn Leu Glu Gly		
325	330	335
Glu Glu Thr Phe Glu Val Thr Met Leu Gly Gln Ala Glu Glu Val Val		
340	345	350
Gln Glu Arg Ile Cys Asp Asp Glu Leu Ile Leu Ile Lys Asn Thr Lys		
355	360	365
Ala Arg Thr Ser Ala Ser Ile Ile Leu Arg Gly Ala Asn Asp Phe Met		
370	375	380
Cys Asp Glu Met Glu Arg Ser Leu His Asp Ala Leu Cys Val Val Lys		
385	390	395
Arg Val Leu Glu Ser Lys Ser Val Val Pro Gly Gly Gly Ala Val Glu		
405	410	415

Ala Ala Leu Ser Ile Tyr Leu Glu Asn Tyr Ala Thr Ser Met Gly Ser
 420 425 430
 Arg Glu Gln Leu Ala Ile Ala Glu Phe Ala Arg Ser Leu Leu Val Ile
 435 440 445
 Pro Asn Thr Leu Ala Val Asn Ala Ala Gln Asp Ser Thr Asp Leu Val
 450 455 460
 Ala Lys Leu Arg Ala Phe His Asn Glu Ala Gln Val Asn Pro Glu Arg
 465 470 475 480
 Lys Asn Leu Lys Trp Ile Gly Leu Asp Leu Val His Gly Lys Pro Arg
 485 490 495
 Asp Asn Lys Gln Ala Gly Val Phe Glu Pro Thr Ile Val Lys Val Lys
 500 505 510
 Ser Leu Lys Phe Ala Thr Glu Ala Ala Ile Thr Ile Leu Arg Ile Asp
 515 520 525
 Asp Leu Ile Lys Leu His Pro Glu Cys Lys Asp Asp Lys His Gly Ser
 530 535 540
 Tyr Glu Asn Ala Val His Ser Gly Ala Leu Asp Asp
 545 550 555

<210> 595

<211> 527

<212> DNA

<213> Mus musculus

<400> 595

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 gatgtgtccc gcctgcgctc ggtgctcatg tccctgaagc aaacaccact gtcccgtag 180
 gtgcccgtca cgagaacggc cgcgaacgac atgggccttg ctggggcaga ggagcagctg 240

cttccgcccag agtggaactt cctctggcag ctgcacacac agcctgttct gttcctctga 300
 atctctggga gctaggaagt gggaccctta cccctttcac cccacaactc cttcctggtc 360
 ccctggccca gcccctcatg actcctgtca gccactcaa ttgtgactgt ccctcctgat 420
 gtatttttct tggcttaaag ggtgtgttaa ctttttttac acttatttat tagtatactc 480
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<210> 596

<211> 475

<212> DNA

<213> Mus musculus

<400> 596

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 aagctacccc ttggacaaag gtgttcaa atctcaaagac accacctgag gccattgcac 180
 tctgctctag cctactggag tacacgceat cctcaaggct ctccccactc gaggtttgtg 240
 cccacagctt cttcgatgaa ctgcggagac tcggagccca gctccccaac gaccgcccgc 300
 tccccccct gticaacttc agtcttggtg gtccccagca ggccctgctt ctccccacac 360
 cacttctac aaccatcct cacaagcttt aactgaagct cagactggcc aagattggca 420
 gccatctgat gccacaactg ctaccctcgc tagctcttcc tgagggcccc acgac 475

<210> 597

<211> 953

<212> DNA

<213> Mus musculus

<400> 597

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accgc t cga actacagcca t g t c c g g g g a c g a g a t g a t t t t t g a t c c t a c t a t g a g c a a 180
aaagaaaaag aagaagaaga agcctttttat g t t a g a t g a a g a a g g t g a t g c c c a g a c a g a 240
agaaaccag ccctcagaga caaaagaagt ggagccagaa ccaactgaag aaaaagacgt 300
ggacgctgat gaggaagaca gtaggaagaa agatgcttct gatgacttag atgatttgaa 360
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tgaagaagct ataaaggatg ttaagattga gagtgatgct caagagccag ccgagctaga 480
ggatgacgtt gacattatga ttgcngacga taagagtcaa gaaccatgcg cggtagctta 540
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gtgtggttgt ctatacgtct gttgttgttg agtgtaagaa cgtgggggcg tttatgcgcg 900
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<210> 598

<211> 1059

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (157).. (918)

<400> 598

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ggattccata cacaggaagc ccctgaggct gagctg atg aag aca cag tgg ggt 174

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Met Lys Thr Gln Trp Gly

	1	5	
gag gtc tgg aca cac ctg tta ctg ctg ctt cta ggt ttt ctc cat gtg	222		
Glu Val Trp Thr His Leu Leu Leu Leu Leu Leu Gly Phe Leu His Val			
10 15 20			
tcc tgg gcc caa agc agc tgc acc ggg ccc cct ggc atc cct ggc atc	270		
Ser Trp Ala Gln Ser Ser Cys Thr Gly Pro Pro Gly Ile Pro Gly Ile			
25 30 35			
cct ggg gtc cct ggg gtt cct ggc tct gat ggc caa cct ggc act cca	318		
Pro Gly Val Pro Gly Val Pro Gly Ser Asp Gly Gln Pro Gly Thr Pro			
40 45 50			
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Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly Leu Ala Gly Asp Leu Gly			
55 60 65 70			
gag ttt gga gag aaa ggg gac cca ggg atc cct ggg act cca ggc aaa	414		
Glu Phe Gly Glu Lys Gly Asp Pro Gly Ile Pro Gly Thr Pro Gly Lys			
75 80 85			
gtt ggc cct aag ggt ccc gtc ggc cct aag ggt act cca ggc ccc tct	462		
Val Gly Pro Lys Gly Pro Val Gly Pro Lys Gly Thr Pro Gly Pro Ser			
90 95 100			
gga ccc cgc ggt ccc aaa ggc gat tct ggg gac tac ggg gct aca cag	510		
Gly Pro Arg Gly Pro Lys Gly Asp Ser Gly Asp Tyr Gly Ala Thr Gln			
105 110 115			
aaa gtc gcc ttc tct gcc ctg agg acc atc aac agc ccc ttg cga ccg	558		
Lys Val Ala Phe Ser Ala Leu Arg Thr Ile Asn Ser Pro Leu Arg Pro			
120 125 130			
aac cag gtc att cgc ttc gaa aag gtg atc acc aac gcg aac gag aac	606		
Asn Gln Val Ile Arg Phe Glu Lys Val Ile Thr Asn Ala Asn Glu Asn			
135 140 145 150			
tat gag cca cgc aac ggc aag ttc acc tgc aag gtg cct ggc ctc tac	654		

Tyr Glu Pro Arg Asn Gly Lys Phe Thr Cys Lys Val Pro Gly Leu Tyr
 155 160 165
 tac ttc acc tat cat gcc agc tcc cgg ggc aac ctg tgt gtg aat ctc 702
 Tyr Phe Thr Tyr His Ala Ser Ser Arg Gly Asn Leu Cys Val Asn Leu
 170 175 180
 gtt cgt ggc cgc gat cgg gac agc atg cag aaa gta gtc acc ttc tgt 750
 Val Arg Gly Arg Asp Arg Asp Ser Met Gln Lys Val Val Thr Phe Cys
 185 190 195
 gac tat gcc cag aac acc ttc cag gtg acc aca ggt ggg gta gtc ttg 798
 Asp Tyr Ala Gln Asn Thr Phe Gln Val Thr Thr Gly Gly Val Val Leu
 200 205 210
 aag cta gag caa gag gag gtt gtt cac ctg cag gcc aca gac aag aac 846
 Lys Leu Glu Gln Glu Glu Val Val His Leu Gln Ala Thr Asp Lys Asn
 215 220 225 230
 tcc ctc ctg ggc att gag ggt gcc aac agc atc ttc act ggc ttt ctg 894
 Ser Leu Leu Gly Ile Glu Gly Ala Asn Ser Ile Phe Thr Gly Phe Leu
 235 240 245
 ctt ttc cct gac atg gat gcg taa tcacggggtc aaattacacc tatccaacac 948
 Leu Phe Pro Asp Met Asp Ala
 250
 catcttcctg ctccctgcagc aatcctccct ggaccctga catcaccccc ttgactgcct 1008
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<210> 599

<211> 253

<212> PRT

<213> Mus musculus

<400> 599

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 Pro Gly Ile Pro Gly Ile Pro Gly Val Pro Gly Val Pro Gly Ser Asp
 35 40 45
 Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly
 50 55 60
 Leu Ala Gly Asp Leu Gly Glu Phe Gly Glu Lys Gly Asp Pro Gly Ile
 65 70 75 80
 Pro Gly Thr Pro Gly Lys Val Gly Pro Lys Gly Pro Val Gly Pro Lys
 85 90 95
 Gly Thr Pro Gly Pro Ser Gly Pro Arg Gly Pro Lys Gly Asp Ser Gly
 100 105 110
 Asp Tyr Gly Ala Thr Gln Lys Val Ala Phe Ser Ala Leu Arg Thr Ile
 115 120 125
 Asn Ser Pro Leu Arg Pro Asn Gln Val Ile Arg Phe Glu Lys Val Ile
 130 135 140
 Thr Asn Ala Asn Glu Asn Tyr Glu Pro Arg Asn Gly Lys Phe Thr Cys
 145 150 155 160
 Lys Val Pro Gly Leu Tyr Tyr Phe Thr Tyr His Ala Ser Ser Arg Gly
 165 170 175
 Asn Leu Cys Val Asn Leu Val Arg Gly Arg Asp Arg Asp Ser Met Gln
 180 185 190
 Lys Val Val Thr Phe Cys Asp Tyr Ala Gln Asn Thr Phe Gln Val Thr
 195 200 205
 Thr Gly Gly Val Val Leu Lys Leu Glu Gln Glu Glu Val Val His Leu
 210 215 220
 Gln Ala Thr Asp Lys Asn Ser Leu Leu Gly Ile Glu Gly Ala Asn Ser

225 230 235 240
 Ile Phe Thr Gly Phe Leu Leu Phe Pro Asp Met Asp Ala
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<210> 600

<211> 689

<212> DNA

<213> Mus musculus

<400> 600

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ggcaaaatgc aacgagtaca gaaggcggct gcttgggtgct aacatccgag tccgagtcga 180
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agtcagactt gaggtggggc cacgtgatat gaagagctgt cagttttagtag cagtcagacg 300
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gattccatit tgtggggaaa ttgactgtga ggactggatc aaaaagatga ctgccaggga 540
tcaagatgtg gaacctgggtg ctccatccat gggagccana agcctttgca ttcctttcaa 600
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<210> 601

<211> 669

<212> DNA

<213> Mus musculus

<400> 601

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 gaatttggt aacgcccigc agaagatatg gaagaggagc aagccittaa aagatctaga 180
 aatactgatg agatggttga attgcgcatt ttgcttcaga gcaagaatgc tggagcagtg 240
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 actgcaacca gccagctccc gctcgaatct gatgctgtgg aatgctttaa ttaccaacat 480
 tataaaggaa gtgactttga ttgcgagttt agactgttga ttcatcagag gctggcagga 540
 ggaataattg gtggtaaagg ttctagaagc agagaacttc gacgaaacac tcagactaca 600
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<210> 602

<211> 892

<212> DNA

<213> Mus musculus

<400> 602

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 cataggcata tccacacact gagtgcagct gtgacatatg cataatgtga actcgagtat 180
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aacattccgg agcgtaccag aacactgggc tgtccccggt cgctctgact gtgtagtact 660
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<210> 603

<211> 2408

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (93).. (2060)

<400> 603

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 Met Met Lys Phe Thr Val Val
 1 5
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 Ala Ala Ala Leu Leu Leu Leu Gly Ala Val Arg Ala Glu Glu Glu Asp
 10 15 20
 aag aag gag gat gtg ggc acg gtg gtc ggc atc gac ttg ggg acc acc 209
 Lys Lys Glu Asp Val Gly Thr Val Val Gly Ile Asp Leu Gly Thr Thr
 25 30 35
 tat tcc tgc ttc ggt gtg ttc aag aac ggc cgc gtg gag atc ata gcc 257
 Tyr Ser Cys Phe Gly Val Phe Lys Asn Gly Arg Val Glu Ile Ile Ala
 40 45 50 55

aac gat cag ggc aac cgc atc acg ccg tcg tat gtg gcc ttc act cct 305
 Asn Asp Gln Gly Asn Arg Ile Thr Pro Ser Tyr Val Ala Phe Thr Pro
 60 65 70
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 Glu Gly Glu Arg Leu Ile Gly Asp Ala Ala Lys Asn Gln Leu Thr Ser
 75 80 85
 aac ccc gag aac acg gtc ttc gat gcc aag cgc ctc atc gga cgc act 401
 Asn Pro Glu Asn Thr Val Phe Asp Ala Lys Arg Leu Ile Gly Arg Thr
 90 95 100
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 Gly Gln Thr Lys Thr Phe Ala Pro Glu Glu Ile Ser Ala Met Val Leu
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 Thr Lys Met Lys Glu Thr Ala Glu Ala Tyr Leu Gly Lys Lys Val Thr
 155 160 165
 cat gca gtt gtt act gta cca gct tac ttc aat gat gcc cag cga caa 641
 His Ala Val Val Thr Val Pro Ala Tyr Phe Asn Asp Ala Gln Arg Gln
 170 175 180
 gca acc aaa gat gct ggc act att gct gga ctg aat gtc atg agg atc 689
 Ala Thr Lys Asp Ala Gly Thr Ile Ala Gly Leu Asn Val Met Arg Ile
 185 190 195
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 Ile Asn Glu Pro Thr Ala Ala Ala Ile Ala Tyr Gly Leu Asp Lys Arg

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Glu Gly Glu Lys Asn Ile Leu Val Phe Asp Leu Gly Gly Gly Thr Phe				
220	225	230		
gat gtg tct ctt ctc acc att gac aat ggt gtc ttt gag tgg gtg gcc				833
Asp Val Ser Leu Leu Thr Ile Asp Asn Gly Val Phe Glu Trp Val Ala				
235	240	245		
act aat gga gat act cac ctg ggt ggg gaa gac ttt gat cag cgg gtc				881
Thr Asn Gly Asp Thr His Leu Gly Gly Glu Asp Phe Asp Gln Arg Val				
250	255	260		
atg gaa cac ttc atc aag ttg tac aaa aag aaa act ggt aaa gat gtt				929
Met Glu His Phe Ile Lys Leu Tyr Lys Lys Lys Thr Gly Lys Asp Val				
265	270	275		
agg aaa gac aac aga gct gtg cag aaa ctc cgg cgt gag gta gaa aag				977
Arg Lys Asp Asn Arg Ala Val Gln Lys Leu Arg Arg Glu Val Glu Lys				
280	285	290	295	
gct aag aga gcc ttg tct tct cag cat caa gca agg att gaa att gag				1025
Ala Lys Arg Ala Leu Ser Ser Gln His Gln Ala Arg Ile Glu Ile Glu				
300	305	310		
tcc ttc ttc gaa gga gaa gac ttc tca gag acc ctt act cgg gcc aaa				1073
Ser Phe Phe Glu Gly Glu Asp Phe Ser Glu Thr Leu Thr Arg Ala Lys				
315	320	325		
ttt gga gag ctg aac atg gac ctg ttc cgc tct acc atg aag cct gtc				1121
Phe Gly Glu Leu Asn Met Asp Leu Phe Arg Ser Thr Met Lys Pro Val				
330	335	340		
cag aaa gtg ttg gaa gac tct gat ctg aag aaa tct gat att gat gaa				1169
Gln Lys Val Leu Glu Asp Ser Asp Leu Lys Lys Ser Asp Ile Asp Glu				
345	350	355		
att gct ctg gtt ggt gga tct act cga att cca aag att cag caa ctg				1217

Ile Ala Leu Val Gly Gly Ser Thr Arg Ile Pro Lys Ile Gln Gln Leu
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 Val Lys Glu Phe Phe Asn Gly Lys Glu Pro Ser Arg Gly Ile Asn Pro
 380 385 390
 gat gag gct gta gcc tat ggt gcc gct gtc cag gct ggt gtc ctc tct 1313
 Asp Glu Ala Val Ala Tyr Gly Ala Ala Val Gln Ala Gly Val Leu Ser
 395 400 405
 ggt gat cag gat aca ggt gat ctg gta ctg ctt gat gtg tgt ccc ctt 1361
 Gly Asp Gln Asp Thr Gly Asp Leu Val Leu Leu Asp Val Cys Pro Leu
 410 415 420
 aca ctt ggt att gaa act gtg gga gga gtc atg aca aaa ctg att cca 1409
 Thr Leu Gly Ile Glu Thr Val Gly Gly Val Met Thr Lys Leu Ile Pro
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 Arg Asn Thr Val Val Pro Thr Lys Lys Ser Gln Ile Phe Ser Thr Ala
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 Ser Asp Asn Gln Pro Thr Val Thr Ile Lys Val Tyr Glu Gly Glu Arg
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 ccc cta aca aaa gac aat cat ctt ctg ggt aca ttt gat ctg act gga 1553
 Pro Leu Thr Lys Asp Asn His Leu Leu Gly Thr Phe Asp Leu Thr Gly
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 att cct cct gct ccc cgt gga gtt ccc cag att gaa gtc act ttt gag 1601
 Ile Pro Pro Ala Pro Arg Gly Val Pro Gln Ile Glu Val Thr Phe Glu
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 Ile Asp Val Asn Gly Ile Leu Arg Val Thr Ala Glu Asp Lys Gly Thr
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 Gly Asn Lys Asn Lys Ile Thr Ile Thr Asn Asp Gln Asn Arg Leu Thr
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 Pro Glu Glu Ile Glu Arg Met Val Asn Asp Ala Glu Lys Phe Ala Glu
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 Glu Asp Lys Lys Leu Lys Glu Arg Ile Asp Thr Arg Asn Glu Leu Glu
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 Ile Ser Lys Leu Tyr Gly Ser Gly Gly Pro Pro Pro Thr Gly Glu Glu
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 gat aca tca gaa aaa gat gag ttg tag gtgcactgat ctgctagagc 2080
 Asp Thr Ser Glu Lys Asp Glu Leu
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 Ser Tyr Val Ala Phe Thr Pro Glu Gly Glu Arg Leu Ile Gly Asp Ala
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 Lys Arg Leu Ile Gly Arg Thr Trp Asn Asp Pro Ser Val Gln Gln Asp
 100 105 110
 Ile Lys Phe Leu Pro Phe Lys Val Val Glu Lys Lys Thr Lys Pro Tyr
 115 120 125
 Ile Gln Val Asp Ile Gly Gly Gly Gln Thr Lys Thr Phe Ala Pro Glu
 130 135 140

Glu Ile Ser Ala Met Val Leu Thr Lys Met Lys Glu Thr Ala Glu Ala
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 Tyr Leu Gly Lys Lys Val Thr His Ala Val Val Thr Val Pro Ala Tyr
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 Phe Asn Asp Ala Gln Arg Gln Ala Thr Lys Asp Ala Gly Thr Ile Ala
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 Gly Leu Asn Val Met Arg Ile Ile Asn Glu Pro Thr Ala Ala Ala Ile
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 Ala Tyr Gly Leu Asp Lys Arg Glu Gly Glu Lys Asn Ile Leu Val Phe
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 Asp Leu Gly Gly Gly Thr Phe Asp Val Ser Leu Leu Thr Ile Asp Asn
 225 230 235 240
 Gly Val Phe Glu Trp Val Ala Thr Asn Gly Asp Thr His Leu Gly Gly
 245 250 255
 Glu Asp Phe Asp Gln Arg Val Met Glu His Phe Ile Lys Leu Tyr Lys
 260 265 270
 Lys Lys Thr Gly Lys Asp Val Arg Lys Asp Asn Arg Ala Val Gln Lys
 275 280 285
 Leu Arg Arg Glu Val Glu Lys Ala Lys Arg Ala Leu Ser Ser Gln His
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 Gln Ala Arg Ile Glu Ile Glu Ser Phe Phe Glu Gly Glu Asp Phe Ser
 305 310 315 320
 Glu Thr Leu Thr Arg Ala Lys Phe Gly Glu Leu Asn Met Asp Leu Phe
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 Arg Ser Thr Met Lys Pro Val Gln Lys Val Leu Glu Asp Ser Asp Leu
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 Lys Lys Ser Asp Ile Asp Glu Ile Ala Leu Val Gly Gly Ser Thr Arg
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 Ile Pro Lys Ile Gln Gln Leu Val Lys Glu Phe Phe Asn Gly Lys Glu

370 375 380
 Pro Ser Arg Gly Ile Asn Pro Asp Glu Ala Val Ala Tyr Gly Ala Ala
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 Val Gln Ala Gly Val Leu Ser Gly Asp Gln Asp Thr Gly Asp Leu Val
 405 410 415
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 Val Met Thr Lys Leu Ile Pro Arg Asn Thr Val Val Pro Thr Lys Lys
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 Lys Val Tyr Glu Gly Glu Arg Pro Leu Thr Lys Asp Asn His Leu Leu
 465 470 475 480
 Gly Thr Phe Asp Leu Thr Gly Ile Pro Pro Ala Pro Arg Gly Val Pro
 485 490 495
 Gln Ile Glu Val Thr Phe Glu Ile Asp Val Asn Gly Ile Leu Arg Val
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 Thr Ala Glu Asp Lys Gly Thr Gly Asn Lys Asn Lys Ile Thr Ile Thr
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 Asp Ala Glu Lys Phe Ala Glu Glu Asp Lys Lys Leu Lys Glu Arg Ile
 545 550 555 560
 Asp Thr Arg Asn Glu Leu Glu Ser Tyr Ala Tyr Ser Leu Lys Asn Gln
 565 570 575
 Ile Gly Asp Lys Glu Lys Leu Gly Gly Lys Leu Ser Ser Glu Asp Lys
 580 585 590
 Glu Thr Met Glu Lys Ala Val Glu Glu Lys Ile Glu Trp Leu Glu Ser
 595 600 605

His Gln Asp Ala Asp Ile Glu Asp Phe Lys Ala Lys Lys Lys Glu Leu

610

615

620

Glu Glu Ile Val Gln Pro Ile Ile Ser Lys Leu Tyr Gly Ser Gly Gly

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630

635

640

Pro Pro Pro Thr Gly Glu Glu Asp Thr Ser Glu Lys Asp Glu Leu

645

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655

<210> 605

<211> 4321

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<400> 605

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ccggcggact ccgaggcccg ctatttggtta ccaactcgct ctcattggcg gggaggagag 180
cagcggagaa ggggggtggg aggggagggg aagggaaggg gtggccactg ccggagccga 240
ctccgcgctg ctgttgggtgc cgctgccgct tctgctgcct ctgctgccgc cgccgccgcc 300
tccggctcct cgctcggccc ctctccgct cc atg tgc cgg ata gcg gga ggc 353

Met Cys Arg Ile Ala Gly Gly

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5

cgc ggg acc ctg ctg ccg ctt ctg gcg gcc ttg ctt cag gcg tct gtg 401

Arg Gly Thr Leu Leu Pro Leu Leu Ala Ala Leu Leu Gln Ala Ser Val

10

15

20

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Glu Ala Ser Gly Glu Ile Ala Leu Cys Lys Thr Gly Phe Pro Glu Asp
 25 30 35
 gtt tac agc gca gtc tta ccg aag gat gtg cac gaa gga cag ccc ctt 497
 Val Tyr Ser Ala Val Leu Pro Lys Asp Val His Glu Gly Gln Pro Leu
 40 45 50 55
 ctc aat gtg aaa ttc agc aac tgc aat aga aaa agg aaa gtt cag tat 545
 Leu Asn Val Lys Phe Ser Asn Cys Asn Arg Lys Arg Lys Val Gln Tyr
 60 65 70
 gaa agc agc gag cca gca gat ttc aag gtg gac gag gac ggc acg gtg 593
 Glu Ser Ser Glu Pro Ala Asp Phe Lys Val Asp Glu Asp Gly Thr Val
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 tat gct gtg aga agc ttc cct ctc act gca gag cag gca aag ttc ctg 641
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 90 95 100
 ata tat gcc caa gac aaa gaa acc cag gaa aag tgg cag gta gct gta 689
 Ile Tyr Ala Gln Asp Lys Glu Thr Gln Glu Lys Trp Gln Val Ala Val
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 aac ctg agc cgg gag cca acc ctg act gag gag cct atg aag gaa cca 737
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 120 125 130 135
 cat gaa att gaa gaa ata gta ttc cct aga caa ctt gcc aag cac agt 785
 His Glu Ile Glu Glu Ile Val Phe Pro Arg Gln Leu Ala Lys His Ser
 140 145 150
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 Leu Pro Glu Asn Ser Arg Gly Pro Phe Pro Gln Glu Leu Val Arg Ile
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 Arg Ser Asp Arg Asp Lys Asn Leu Ser Leu Arg Tyr Ser Val Thr Gly
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 cca gga gct gac cag cct cca acg ggc atc ttc att atc aac ccc atc 977
 Pro Gly Ala Asp Gln Pro Pro Thr Gly Ile Phe Ile Ile Asn Pro Ile
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 cgg ttt cac ttg aga gca cat gca gtg gac atc aat ggc aat caa gtg 1073
 Arg Phe His Leu Arg Ala His Ala Val Asp Ile Asn Gly Asn Gln Val
 235 240 245
 gag aac ccc att gac att gtc atc aat gtt att gac atg aat gat aac 1121
 Glu Asn Pro Ile Asp Ile Val Ile Asn Val Ile Asp Met Asn Asp Asn
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 tca aag cct ggg acg tat gtg atg acg gtc act gcc att gat gcg gat 1217
 Ser Lys Pro Gly Thr Tyr Val Met Thr Val Thr Ala Ile Asp Ala Asp
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 Asp Pro Asn Ala Leu Asn Gly Met Leu Arg Tyr Arg Ile Leu Ser Gln
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 gcg ccc agc aca cct tca ccc aac atg ttt aca atc aac aat gag act 1313
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 Gly Asp Ile Ile Thr Val Ala Ala Gly Leu Asp Arg Glu Lys Val Gln

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Gln Tyr Thr Leu Ile Ile Gln Ala Thr Asp Met Glu Gly Asn Pro Thr			
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tat ggc ctt tca aac aca gcc aca gcc gtc atc acg gtg aca gat gtc			1457
Tyr Gly Leu Ser Asn Thr Ala Thr Ala Val Ile Thr Val Thr Asp Val			
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aat gac aat cct cca gag ttt act gcc atg act ttc tac gga gaa gtc			1505
Asn Asp Asn Pro Pro Glu Phe Thr Ala Met Thr Phe Tyr Gly Glu Val			
380	385	390	
cct gag aac agg gtg gac gtc att gta gcc aac cta act gtc acg gac			1553
Pro Glu Asn Arg Val Asp Val Ile Val Ala Asn Leu Thr Val Thr Asp			
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Lys Asp Gln Pro His Thr Pro Ala Trp Asn Ala Ala Tyr Arg Ile Ser			
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ggt gga gac cct aca gga agg ttt gcc atc ctg aca gac ccc aac agc			1649
Gly Gly Asp Pro Thr Gly Arg Phe Ala Ile Leu Thr Asp Pro Asn Ser			
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aat gat ggg cta gtc aca gtg gta aaa cca att gac ttt gaa acg aat			1697
Asn Asp Gly Leu Val Thr Val Val Lys Pro Ile Asp Phe Glu Thr Asn			
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agg atg ttt gtc ctt act gtt gct gca gaa aac caa gtg cca tta gct			1745
Arg Met Phe Val Leu Thr Val Ala Ala Glu Asn Gln Val Pro Leu Ala			
460	465	470	
aaa ggc att cag cac cca cct cag tcg aca gcc act gtg.tct gtg aca			1793
Lys Gly Ile Gln His Pro Pro Gln Ser Thr Ala Thr Val Ser Val Thr			
475	480	485	
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Val Ile Asp Val Asn Glu Asn Pro Tyr Phe Ala Pro Asn Pro Lys Ile	
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att cgc caa gag gaa ggc ctc cac gca ggt acc atg ctg acc acg ctc	1889
Ile Arg Gln Glu Glu Gly Leu His Ala Gly Thr Met Leu Thr Thr Leu	
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act gct cag gac ccc gat cga tat atg caa cag aat atc aga tac aca	1937
Thr Ala Gln Asp Pro Asp Arg Tyr Met Gln Gln Asn Ile Arg Tyr Thr	
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aaa ttg tct gat cct gcc aac tgg ctg aaa ata gac ccc gtg aat ggg	1985
Lys Leu Ser Asp Pro Ala Asn Trp Leu Lys Ile Asp Pro Val Asn Gly	
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cag atc act act att gcc gtt ttg gac aga gaa tcg cca tat gta caa	2033
Gln Ile Thr Thr Ile Ala Val Leu Asp Arg Glu Ser Pro Tyr Val Gln	
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aac aac atc tat aat gct acc ttc ctt gct tct gac aat gga atc ccg	2081
Asn Asn Ile Tyr Asn Ala Thr Phe Leu Ala Ser Asp Asn Gly Ile Pro	
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cct atg agt ggg aca gga aca ctg caa atc tat tta ctt gat atc aat	2129
Pro Met Ser Gly Thr Gly Thr Leu Gln Ile Tyr Leu Leu Asp Ile Asn	
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Asp Asn Ala Pro Gln Val Leu Pro Gln Glu Ala Glu Thr Cys Glu Thr	
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cca gaa ccc aac tca att aac atc gca gca ctt gat tat gac ata gac	2225
Pro Glu Pro Asn Ser Ile Asn Ile Ala Ala Leu Asp Tyr Asp Ile Asp	
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cca aac gcc ggg ccg ttc gcg ttt gat ctt ccc tta tct cca gtg act	2273
Pro Asn Ala Gly Pro Phe Ala Phe Asp Leu Pro Leu Ser Pro Val Thr	
635	640
645	

att aaa aga aac tgg acc atc aac cgg ctt aat ggt gat ttt gct cag	2321
Ile Lys Arg Asn Trp Thr Ile Asn Arg Leu Asn Gly Asp Phe Ala Gln	
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ctc aat tta aag ata aaa ttt ttg gaa gct ggt atc tat gaa gtt ccc	2369
Leu Asn Leu Lys Ile Lys Phe Leu Glu Ala Gly Ile Tyr Glu Val Pro	
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715 720 725	
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780 785 790	
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Gln Pro Asp Thr Val Glu Pro Asp Ala Ile Lys Pro Val Gly Ile Arg	

795	800	805	
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Arg Leu Asp Glu Arg Pro Ile His Ala Glu Pro Gln Tyr Pro Val Arg			
810	815	820	
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Ser Ala Ala Pro His Pro Gly Asp Ile Gly Asp Phe Ile Asn Glu Gly			
825	830	835	
cit aaa gct gct gac aac gac ccc acg gcg cca ccg tat gac tcc ctc			2897
Leu Lys Ala Ala Asp Asn Asp Pro Thr Ala Pro Pro Tyr Asp Ser Leu			
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tta gtc ttt gac tac gag ggc agc ggc tcc acg gct ggc tcc ttg agc			2945
Leu Val Phe Asp Tyr Glu Gly Ser Gly Ser Thr Ala Gly Ser Leu Ser			
860	865	870	
tcc ctc aac tcc tcc agt agc ggt ggg gac cag gac tat gac tac ctg			2993
Ser Leu Asn Ser Ser Ser Ser Gly Gly Asp Gln Asp Tyr Asp Tyr Leu			
875	880	885	
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Asn Asp Trp Gly Pro Arg Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly			
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Gly Asp Asp			
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<212> PRT

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			20						25					30	
Lys	Thr	Gly	Phe	Pro	Glu	Asp	Val	Tyr	Ser	Ala	Val	Leu	Pro	Lys	Asp
			35						40					45	
Val	His	Glu	Gly	Gln	Pro	Leu	Leu	Asn	Val	Lys	Phe	Ser	Asn	Cys	Asn
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 Val Asp Glu Asp Gly Thr Val Tyr Ala Val Arg Ser Phe Pro Leu Thr
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 Ala Glu Gln Ala Lys Phe Leu Ile Tyr Ala Gln Asp Lys Glu Thr Gln
 100 105 110
 Glu Lys Trp Gln Val Ala Val Asn Leu Ser Arg Glu Pro Thr Leu Thr
 115 120 125
 Glu Glu Pro Met Lys Glu Pro His Glu Ile Glu Glu Ile Val Phe Pro
 130 135 140
 Arg Gln Leu Ala Lys His Ser Gly Ala Leu Gln Arg Gln Lys Arg Asp
 145 150 155 160
 Trp Val Ile Pro Pro Ile Asn Leu Pro Glu Asn Ser Arg Gly Pro Phe
 165 170 175
 Pro Gln Glu Leu Val Arg Ile Arg Ser Asp Arg Asp Lys Asn Leu Ser
 180 185 190
 Leu Arg Tyr Ser Val Thr Gly Pro Gly Ala Asp Gln Pro Pro Thr Gly
 195 200 205
 Ile Phe Ile Ile Asn Pro Ile Ser Gly Gln Leu Ser Val Thr Lys Pro
 210 215 220
 Leu Asp Arg Glu Leu Ile Ala Arg Phe His Leu Arg Ala His Ala Val
 225 230 235 240
 Asp Ile Asn Gly Asn Gln Val Glu Asn Pro Ile Asp Ile Val Ile Asn
 245 250 255
 Val Ile Asp Met Asn Asp Asn Arg Pro Glu Phe Leu His Gln Val Trp
 260 265 270
 Asn Gly Ser Val Pro Glu Gly Ser Lys Pro Gly Thr Tyr Val Met Thr
 275 280 285
 Val Thr Ala Ile Asp Ala Asp Asp Pro Asn Ala Leu Asn Gly Met Leu

290	295	300
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Phe Thr Ile Asn Asn Glu Thr Gly Asp Ile Ile Thr Val Ala Ala Gly		
325	330	335
Leu Asp Arg Glu Lys Val Gln Gln Tyr Thr Leu Ile Ile Gln Ala Thr		
340	345	350
Asp Met Glu Gly Asn Pro Thr Tyr Gly Leu Ser Asn Thr Ala Thr Ala		
355	360	365
Val Ile Thr Val Thr Asp Val Asn Asp Asn Pro Pro Glu Phe Thr Ala		
370	375	380
Met Thr Phe Tyr Gly Glu Val Pro Glu Asn Arg Val Asp Val Ile Val		
385	390	395 400
Ala Asn Leu Thr Val Thr Asp Lys Asp Gln Pro His Thr Pro Ala Trp		
405	410	415
Asn Ala Ala Tyr Arg Ile Ser Gly Gly Asp Pro Thr Gly Arg Phe Ala		
420	425	430
Ile Leu Thr Asp Pro Asn Ser Asn Asp Gly Leu Val Thr Val Val Lys		
435	440	445
Pro Ile Asp Phe Glu Thr Asn Arg Met Phe Val Leu Thr Val Ala Ala		
450	455	460
Glu Asn Gln Val Pro Leu Ala Lys Gly Ile Gln His Pro Pro Gln Ser		
465	470	475 480
Thr Ala Thr Val Ser Val Thr Val Ile Asp Val Asn Glu Asn Pro Tyr		
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Phe Ala Pro Asn Pro Lys Ile Ile Arg Gln Glu Glu Gly Leu His Ala		
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Gly Thr Met Leu Thr Thr Leu Thr Ala Gln Asp Pro Asp Arg Tyr Met		
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Gln Gln Asn Ile Arg Tyr Thr Lys Leu Ser Asp Pro Ala Asn Trp Leu
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Lys Ile Asp Pro Val Asn Gly Gln Ile Thr Thr Ile Ala Val Leu Asp
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Arg Glu Ser Pro Tyr Val Gln Asn Asn Ile Tyr Asn Ala Thr Phe Leu
565 570 575
Ala Ser Asp Asn Gly Ile Pro Pro Met Ser Gly Thr Gly Thr Leu Gln
580 585 590
Ile Tyr Leu Leu Asp Ile Asn Asp Asn Ala Pro Gln Val Leu Pro Gln
595 600 605
Glu Ala Glu Thr Cys Glu Thr Pro Glu Pro Asn Ser Ile Asn Ile Ala
610 615 620
Ala Leu Asp Tyr Asp Ile Asp Pro Asn Ala Gly Pro Phe Ala Phe Asp
625 630 635 640
Leu Pro Leu Ser Pro Val Thr Ile Lys Arg Asn Trp Thr Ile Asn Arg
645 650 655
Leu Asn Gly Asp Phe Ala Gln Leu Asn Leu Lys Ile Lys Phe Leu Glu
660 665 670
Ala Gly Ile Tyr Glu Val Pro Ile Ile Ile Thr Asp Ser Gly Asn Pro
675 680 685
Pro Lys Ser Asn Ile Ser Ile Leu Arg Val Lys Val Cys Gln Cys Asp
690 695 700
Ser Asn Gly Asp Cys Thr Asp Val Asp Arg Ile Val Gly Ala Gly Leu
705 710 715 720
Gly Thr Gly Ala Ile Ile Ala Ile Leu Leu Cys Ile Ile Ile Leu Leu
725 730 735
Ile Leu Val Leu Met Phe Val Val Trp Met Lys Arg Arg Asp Lys Glu
740 745 750
Arg Gln Ala Lys Gln Leu Leu Ile Asp Pro Glu Asp Asp Val Arg Asp

755 760 765
 Asn Ile Leu Lys Tyr Asp Glu Glu Gly Gly Gly Glu Glu Asp Gln Asp
 770 775 780
 Tyr Asp Leu Ser Gln Leu Gln Gln Pro Asp Thr Val Glu Pro Asp Ala
 785 790 795 800
 Ile Lys Pro Val Gly Ile Arg Arg Leu Asp Glu Arg Pro Ile His Ala
 805 810 815
 Glu Pro Gln Tyr Pro Val Arg Ser Ala Ala Pro His Pro Gly Asp Ile
 820 825 830
 Gly Asp Phe Ile Asn Glu Gly Leu Lys Ala Ala Asp Asn Asp Pro Thr
 835 840 845
 Ala Pro Pro Tyr Asp Ser Leu Leu Val Phe Asp Tyr Glu Gly Ser Gly
 850 855 860
 Ser Thr Ala Gly Ser Leu Ser Ser Leu Asn Ser Ser Ser Ser Gly Gly
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 Asp Gln Asp Tyr Asp Tyr Leu Asn Asp Trp Gly Pro Arg Phe Lys Lys
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 900 905

<210> 607

<211> 587

<212> DNA

<213> Mus musculus

<400> 607

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 ctiggaatca aacctgggtc ctctggaaga gctgccagt ctcttaactg ttgagccacc 180

tctccagcct caccaagctt tatctgataa tgattgtttg aatagatctc ctccgtgcc 240
 tctctggact ataagtacta caaggacatc aatgcaagcc tgaagaaaaa gtaattgctt 300
 ccttttaagc catggcctat cagttataca gaaatacaac ttitggggaac agtcctcaag 360
 agagccttga tgagctcata cagctctaac agatcacccc ccagcttgcg cttcaagttc 420
 tacttcagtt tgataaagct ataaattcag cattggctca gagagtcagg aacagagtca 480
 atttcagggg ctctctaaat acctacagat tctgcgataa tgtttgggac tttgtattga 540
 atgaagttag attccgagaa gttacagacc taattaaagt ggtaaag 587

<210> 608

<211> 958

<212> DNA

<213> Mus musculus

<400> 608

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 ttctcgggaag caagaagcgg agtggaaaga aaaggcgata aaggagctgg aagagtggta 180
 tgcgaggcag gacgagcagc tacagaagac aaaggcaaac aacagggcag cagaagaagc 240
 ctttgtaaac gacattgacg agtcaccccc aggcactgag tgggagcggg tggcccgctt 300
 gtgtgacttt aaccccaagt ccagcaaaca ggccaaagat gtctctcgca tgcgctcagt 360
 cctcatctcc ctgaagcagg ccccttggtg cactgaagag ccacctgtgg aaacactacg 420
 tctacaatat cttaatccta ctcagtgaag ctgttcacgt aattggatta attatgttga 480
 gttcttttgg actagacttg tgtctttaga gttgatcatt gtttgtgatt gcatgtttcg 540
 ttcaactgtg ttntccgtgg cattcagaga cgagagagga agaggaangg agtagacgtc 600
 atgacagtag catcacctgt cgttttgtcg ataacatgag aataattctg tttcaacatg 660
 taggaaaata aaataaaaaa catnngcgaa gcttatcctt tagtagggta attagcttga 720
 atgggtcggt aacgcgtcct ggaacactgn gtgcacataa cgttcggcat ccttccagtg 780
 gtataagacc gcanctcttt agaaggccga nnactaatac gagcgcggtt gtgtagatgg 840
 tgttgtttaga gacgttngtg acgcgcgaga tcgtctatgg ggtgggaata cttgtctcac 900

acatgtgttc tactctttgc gctctactgt gtgtgtctcca agtgatcggg cgaggggc 958

<210> 609

<211> 507

<212> DNA

<213> Mus musculus

<400> 609

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ctcggactcg tcggatagca tggatacggg cgctggctcc atctgagaag ctgggtggagc 180
cttcggaaaa cgagaaaagg ctgaagagga tcggctacttc cgagagaaga ctaaagaaca 240
gctggctgcc ctgaggaaac accatgaaga tgagattgac caccattcga aggagataga 300
gcgtctgcag aagcaaattg aacgccataa gaagaagatc caacaactaa agaataatca 360
ttgaatgcgc gcagtcggtc cctcacagag tggcccggtat cactccccac gtctgtagac 420
acatggcttt gaatgattac tatttgggtct gtgtgtctact aacagataat aaacgatcac 480
caggaaaaaa aaaaaaaaaa aaaacat 507

<210> 610

<211> 953

<212> DNA

<213> Mus musculus

<400> 610

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ccttcgcat gggattcgga gacctgaaa cccctgccgg cctccagggtg ctcaacgatt 120
acctggcgga caagagctac attgaggggt acgtgccatc acaagcagac gtggcagtat 180
ttgaagcagt ttctgggtcca ccacctgctg acctgtgtca tgcctacgt tggataatc 240
acatcaagtc gtatgaaaaa gaaaaggcca gcctgccggg agtgaagaaa tctttgggca 300

agtatggccc tagcagtgtga gaagacacca caggaagtgg agctgcagat gctaaggatg 360
 atgacgacat tgatctcttt ggaictgatg atgaggagga aagtgaggaa caaagaagct 420
 acgagaagaa cgccttgac agtatgagtc aagaaactaa aaacctgcag ttgttgcgaa 480
 tcttccacct actagacgtg aaccttggga tgatgagacg gcatgacaac tagagatgtg 540
 ccgaggattc acagatgcct gtgtgggtnt ctagattgtc agtggatatg agtaaaacgt 600
 caatacatgt gagttgagat gtaagttgca cgttcgtgag acgaatatcc ttaggcacgt 660
 caccanggtg gcgcttacca atttacactt taagngggccc taaacttgga gtagaaaaaa 720
 gaaaaaaaaag ccggcggggc gtcttctctc tgtgggtgtt ctgtccgccg ccgcgggggt 780
 ttacagagt ggctgcaccc tntgnnanc cctcttgttg ggggtggttg gagatggagg 840
 ggtggtggtg tgtacatagt ctgccgtgt ctnaccgca gtctctctg gcgctcaagc 900
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<210> 611

<211> 1130

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (55).. (735)

<400> 611

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Met.

1

ccg gtc aaa gga ggt agc aag tgc atc aaa tac ctg ctc ttc gga ttt 105

Pro Val Lys Gly Gly Ser Lys Cys Ile Lys Tyr Leu Leu Phe Gly Phe

5

10

15

aac ttc atc ttc tgg ctc gct ggc att gca gtg ctt gct att gga cta 153

Asn Phe Ile Phe Trp Leu Ala Gly Ile Ala Val Leu Ala Ile Gly Leu
 20 25 30
 tgg ctc cga ttc gac tct cag acc aag agc atc ttc gag caa gag aat 201
 Trp Leu Arg Phe Asp Ser Gln Thr Lys Ser Ile Phe Glu Gln Glu Asn
 35 40 45
 aac cat tcc agt ttc tac aca gga gtg tac att ctg att gga gcc ggg 249
 Asn His Ser Ser Phe Tyr Thr Gly Val Tyr Ile Leu Ile Gly Ala Gly
 50 55 60 65
 gcc ctc atg atg ctg gtt ggt ttc ctg ggc tgc tgt gga gct gta caa 297
 Ala Leu Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly Ala Val Gln
 70 75 80
 gag tcc cag tgc atg ctg gga ttg ttc ttc ggg ttc ctc ttg gtg ata 345
 Glu Ser Gln Cys Met Leu Gly Leu Phe Phe Gly Phe Leu Leu Val Ile
 85 90 95
 ttc gcc att gag ata gcc gcc gcc gtc tgg ggc tat acc cac aag gat 393
 Phe Ala Ile Glu Ile Ala Ala Ala Val Trp Gly Tyr Thr His Lys Asp
 100 105 110
 gag gtg att aaa gaa ctc cag gag ttt tac aag gac acc tac caa aag 441
 Glu Val Ile Lys Glu Leu Gln Glu Phe Tyr Lys Asp Thr Tyr Gln Lys
 115 120 125
 tta cgg agc aag gat gaa ccc cag cgg gaa aca ctc aaa gcc atc cat 489
 Leu Arg Ser Lys Asp Glu Pro Gln Arg Glu Thr Leu Lys Ala Ile His
 130 135 140 145
 atg gcg ttg gac tgc tgt ggc ata gct ggt cct ttg gag cag ttt atc 537
 Met Ala Leu Asp Cys Cys Gly Ile Ala Gly Pro Leu Glu Gln Phe Ile
 150 155 160
 tcg gac acc tgc ccc aag aaa cag ctt ttg gaa agt ttc cag gtt aag 585
 Ser Asp Thr Cys Pro Lys Lys Gln Leu Leu Glu Ser Phe Gln Val Lys
 165 170 175

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ccc tgc cct gaa gcc atc agt gag gtc ttc aac aac aag ttc cac atc    633
Pro Cys Pro Glu Ala Ile Ser Glu Val Phe Asn Asn Lys Phe His Ile
      180              185              190
att gga gca gtg ggt atc ggc atc gcc gtg gtg atg atc ttc ggc atg    681
Ile Gly Ala Val Gly Ile Gly Ile Ala Val Val Met Ile Phe Gly Met
      195              200              205
atc ttc agc atg atc ctg tgc tgc gcc atc cgc agg agc cga gaa atg    729
Ile Phe Ser Met Ile Leu Cys Cys Ala Ile Arg Arg Ser Arg Glu Met
210              215              220              225
gtc tag agtctgccca accccgagca ggaacaacgg ccctgaagac tgtccggggcc    785
Val
atttgggttt tttttgccac taatattagt attcattatg catttctaaa taacagtcac 845
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<210> 612

<211> 226

<212> PRT

<213> Mus musculus

<400> 612

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      20              25              30
Leu Trp Leu Arg Phe Asp Ser Gln Thr Lys Ser Ile Phe Glu Gln Glu

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35 40 45
 Asn Asn His Ser Ser Phe Tyr Thr Gly Val Tyr Ile Leu Ile Gly Ala
 50 55 60
 Gly Ala Leu Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly Ala Val
 65 70 75 80
 Gln Glu Ser Gln Cys Met Leu Gly Leu Phe Phe Gly Phe Leu Leu Val
 85 90 95
 Ile Phe Ala Ile Glu Ile Ala Ala Ala Val Trp Gly Tyr Thr His Lys
 100 105 110
 Asp Glu Val Ile Lys Glu Leu Gln Glu Phe Tyr Lys Asp Thr Tyr Gln
 115 120 125
 Lys Leu Arg Ser Lys Asp Glu Pro Gln Arg Glu Thr Leu Lys Ala Ile
 130 135 140
 His Met Ala Leu Asp Cys Cys Gly Ile Ala Gly Pro Leu Glu Gln Phe
 145 150 155 160
 Ile Ser Asp Thr Cys Pro Lys Lys Gln Leu Leu Glu Ser Phe Gln Val
 165 170 175
 Lys Pro Cys Pro Glu Ala Ile Ser Glu Val Phe Asn Asn Lys Phe His
 180 185 190
 Ile Ile Gly Ala Val Gly Ile Gly Ile Ala Val Val Met Ile Phe Gly
 195 200 205
 Met Ile Phe Ser Met Ile Leu Cys Cys Ala Ile Arg Arg Ser Arg Glu
 210 215 220
 Met Val
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<210> 613

<211> 1966

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (162).. (1781)

<400> 613

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atccgtcctc ctgaaccgcg gcagacgcca ccaaggtcgc c atg ccg gag aac gta 176
                                         Met Pro Glu Asn Val
                                         1             5
gct tcc cga agc ggg gcg ccc acc gcc ggg ccc ggc agc cgc ggg aaa 224
Ala Ser Arg Ser Gly Ala Pro Thr Ala Gly Pro Gly Ser Arg Gly Lys
          10             15             20
agc gcc tac cag gac cgc gac aag cca gcc cag atc cgc ttc agc aat 272
Ser Ala Tyr Gln Asp Arg Asp Lys Pro Ala Gln Ile Arg Phe Ser Asn
          25             30             35
att tcc gcg gcc aaa gcg gtt gct gat gct att aga aca agc ctt gga 320
Ile Ser Ala Ala Lys Ala Val Ala Asp Ala Ile Arg Thr Ser Leu Gly
          40             45             50
cct aaa gga atg gac aaa atg att caa gat gga aaa ggc gat gtg acc 368
Pro Lys Gly Met Asp Lys Met Ile Gln Asp Gly Lys Gly Asp Val Thr
          55             60             65
att aca aat gat ggt gcc acc att ctg aaa caa atg cag gta ttg cat 416
Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Gln Met Gln Val Leu His
          70             75             80             85
cca gca gcc aga atg ctg gtg gaa ttg tct aaa gct caa gac ata gaa 464
Pro Ala Ala Arg Met Leu Val Glu Leu Ser Lys Ala Gln Asp Ile Glu

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90	95	100	
gca gga gat ggc acc acg tcg gtt gtc atc att gct ggc tct ctt tta			512
Ala Gly Asp Gly Thr Thr Ser Val Val Ile Ile Ala Gly Ser Leu Leu			
105	110	115	
gac tcc tgt acc aaa ctt ctg cag aaa ggt ata cat cca acc atc att			560
Asp Ser Cys Thr Lys Leu Leu Gln Lys Gly Ile His Pro Thr Ile Ile			
120	125	130	
tcc gag tca ttc cag aaa gct ttg gaa aag ggt ctt gaa atc ctt act			608
Ser Glu Ser Phe Gln Lys Ala Leu Glu Lys Gly Leu Glu Ile Leu Thr			
135	140	145	
gac atg tct cga cct gtg caa ctg agc gac aga gaa act ttg tta aat			656
Asp Met Ser Arg Pro Val Gln Leu Ser Asp Arg Glu Thr Leu Leu Asn			
150	155	160	165
agc gca act act tca ttg aat tca aag gtt gtc tct cag tat tca agt			704
Ser Ala Thr Thr Ser Leu Asn Ser Lys Val Val Ser Gln Tyr Ser Ser			
170	175	180	
cta ctc tct cca atg agt gtc aat gcg gtg atg aaa gtg att gac cca			752
Leu Leu Ser Pro Met Ser Val Asn Ala Val Met Lys Val Ile Asp Pro			
185	190	195	
gcc aca gct acc agt gta gat ctt cga gat att aaa ata gtt aag aag			800
Ala Thr Ala Thr Ser Val Asp Leu Arg Asp Ile Lys Ile Val Lys Lys			
200	205	210	
ctt ggt ggg aca ata gat gac tgt gag ctg gtg gaa ggc ctc gtt ctc			848
Leu Gly Gly Thr Ile Asp Asp Cys Glu Leu Val Glu Gly Leu Val Leu			
215	220	225	
aca cag aaa gta gca aat tct ggc ata aca aga gtt gaa aag gct aag			896
Thr Gln Lys Val Ala Asn Ser Gly Ile Thr Arg Val Glu Lys Ala Lys			
230	235	240	245
att ggg ctt att cag ttt tgc tta tct gct cct aaa aca gat atg gat			944

Ile Gly Leu Ile Gln Phe Cys Leu Ser Ala Pro Lys Thr Asp Met Asp
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 aat caa ata gta gta tct gac tat gcc cag atg gat cga gtg ctt cga 992
 Asn Gln Ile Val Val Ser Asp Tyr Ala Gln Met Asp Arg Val Leu Arg
 265 270 275
 gag gag aga gcc tat att tta aat ttg gtg aag caa att aag aaa aca 1040
 Glu Glu Arg Ala Tyr Ile Leu Asn Leu Val Lys Gln Ile Lys Lys Thr
 280 285 290
 gga tgt aat gtc ctt ctc ata cag aag tct atc ctg aga gat gcc ctt 1088
 Gly Cys Asn Val Leu Leu Ile Gln Lys Ser Ile Leu Arg Asp Ala Leu
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 Ser Asp Leu Ala Leu His Phe Leu Asn Lys Met Lys Ile Met Val Val
 310 315 320 325
 aag gac gtt gaa aga gaa gac att gaa ttc atc tgt aag aca att gga 1184
 Lys Asp Val Glu Arg Glu Asp Ile Glu Phe Ile Cys Lys Thr Ile Gly
 330 335 340
 acc aaa cca gtt gct cac att gac cag ttc act gct gac atg ctg ggt 1232
 Thr Lys Pro Val Ala His Ile Asp Gln Phe Thr Ala Asp Met Leu Gly
 345 350 355
 tct gct gag tta gca gag gaa gtc agt tta aat ggt tct gga aaa cta 1280
 Ser Ala Glu Leu Ala Glu Glu Val Ser Leu Asn Gly Ser Gly Lys Leu
 360 365 370
 ttc aag att aca ggt tgt aca agc cca ggg aaa aca gtt aca att gtc 1328
 Phe Lys Ile Thr Gly Cys Thr Ser Pro Gly Lys Thr Val Thr Ile Val
 375 380 385
 gta cgt ggt tct aac aaa ctg gtg att gaa gaa gct gag cgc tcc att 1376
 Val Arg Gly Ser Asn Lys Leu Val Ile Glu Glu Ala Glu Arg Ser Ile
 390 395 400 405

cat gat gct ctc tgt gtc atc cga tgc tta gta aag aaa aga gct ctt 1424
 His Asp Ala Leu Cys Val Ile Arg Cys Leu Val Lys Lys Arg Ala Leu
 410 415 420
 att gca gga ggt ggt gct cca gaa ata gag ctg gcc ctc aga ctg aca 1472
 Ile Ala Gly Gly Gly Ala Pro Glu Ile Glu Leu Ala Leu Arg Leu Thr
 425 430 435
 gag tac tcc cga aca ctg agt ggt atg gag tcc tac tgt gtt cgt gct 1520
 Glu Tyr Ser Arg Thr Leu Ser Gly Met Glu Ser Tyr Cys Val Arg Ala
 440 445 450
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 Phe Ala Asp Ala Met Glu Val Ile Pro Ser Thr Leu Ala Glu Asn Ala
 455 460 465
 ggc ctg aat ccc att tct aca gta aca gag cta aga aac cgc cat gcc 1616
 Gly Leu Asn Pro Ile Ser Thr Val Thr Glu Leu Arg Asn Arg His Ala
 470 475 480 485
 caa gga gaa aaa act aca ggc att aat gtc cga aag ggt ggg atc tcc 1664
 Gln Gly Glu Lys Thr Thr Gly Ile Asn Val Arg Lys Gly Gly Ile Ser
 490 495 500
 aac att ttg gag gaa atg gtt gtt cag cct ctg ttg gtg tca gtc agt 1712
 Asn Ile Leu Glu Glu Met Val Val Gln Pro Leu Leu Val Ser Val Ser
 505 510 515
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 Ala Leu Thr Leu Ala Thr Glu Thr Val Arg Ser Ile Leu Lys Ile Asp
 520 525 530
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 Asp Val Val Asn Thr Arg
 535 540
 tatggacaga agtactgtgg ctggaatgaa ggacaaccac ctgtttcctt gtctggaagc 1871
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1966

<210> 614

<211> 539

<212> PRT

<213> Mus musculus

<400> 614

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 35 40 45

Arg Thr Ser Leu Gly Pro Lys Gly Met Asp Lys Met Ile Gln Asp Gly
 50 55 60

Lys Gly Asp Val Thr Ile Thr Asn Asp Gly Ala Thr Ile Leu Lys Gln
 65 70 75 80

Met Gln Val Leu His Pro Ala Ala Arg Met Leu Val Glu Leu Ser Lys
 85 90 95

Ala Gln Asp Ile Glu Ala Gly Asp Gly Thr Thr Ser Val Val Ile Ile
 100 105 110

Ala Gly Ser Leu Leu Asp Ser Cys Thr Lys Leu Leu Gln Lys Gly Ile
 115 120 125

His Pro Thr Ile Ile Ser Glu Ser Phe Gln Lys Ala Leu Glu Lys Gly
 130 135 140

Leu Glu Ile Leu Thr Asp Met Ser Arg Pro Val Gln Leu Ser Asp Arg
 145 150 155 160

Glu Thr Leu Leu Asn Ser Ala Thr Thr Ser Leu Asn Ser Lys Val Val

	165		170		175
Ser Gln Tyr Ser Ser Leu Leu Ser Pro Met Ser Val Asn Ala Val Met					
	180		185		190
Lys Val Ile Asp Pro Ala Thr Ala Thr Ser Val Asp Leu Arg Asp Ile					
	195		200		205
Lys Ile Val Lys Lys Leu Gly Gly Thr Ile Asp Asp Cys Glu Leu Val					
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Glu Gly Leu Val Leu Thr Gln Lys Val Ala Asn Ser Gly Ile Thr Arg					
225		230		235	240
Val Glu Lys Ala Lys Ile Gly Leu Ile Gln Phe Cys Leu Ser Ala Pro					
	245		250		255
Lys Thr Asp Met Asp Asn Gln Ile Val Val Ser Asp Tyr Ala Gln Met					
	260		265		270
Asp Arg Val Leu Arg Glu Glu Arg Ala Tyr Ile Leu Asn Leu Val Lys					
	275		280		285
Gln Ile Lys Lys Thr Gly Cys Asn Val Leu Leu Ile Gln Lys Ser Ile					
	290		295		300
Leu Arg Asp Ala Leu Ser Asp Leu Ala Leu His Phe Leu Asn Lys Met					
305		310		315	320
Lys Ile Met Val Val Lys Asp Val Glu Arg Glu Asp Ile Glu Phe Ile					
	325		330		335
Cys Lys Thr Ile Gly Thr Lys Pro Val Ala His Ile Asp Gln Phe Thr					
	340		345		350
Ala Asp Met Leu Gly Ser Ala Glu Leu Ala Glu Glu Val Ser Leu Asn					
	355		360		365
Gly Ser Gly Lys Leu Phe Lys Ile Thr Gly Cys Thr Ser Pro Gly Lys					
	370		375		380
Thr Val Thr Ile Val Val Arg Gly Ser Asn Lys Leu Val Ile Glu Glu					
385		390		395	400

Ala Glu Arg Ser Ile His Asp Ala Leu Cys Val Ile Arg Cys Leu Val
 405 410 415
 Lys Lys Arg Ala Leu Ile Ala Gly Gly Gly Ala Pro Glu Ile Glu Leu
 420 425 430
 Ala Leu Arg Leu Thr Glu Tyr Ser Arg Thr Leu Ser Gly Met Glu Ser
 435 440 445
 Tyr Cys Val Arg Ala Phe Ala Asp Ala Met Glu Val Ile Pro Ser Thr
 450 455 460
 Leu Ala Glu Asn Ala Gly Leu Asn Pro Ile Ser Thr Val Thr Glu Leu
 465 470 475 480
 Arg Asn Arg His Ala Gln Gly Glu Lys Thr Thr Gly Ile Asn Val Arg
 485 490 495
 Lys Gly Gly Ile Ser Asn Ile Leu Glu Glu Met Val Val Gln Pro Leu
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 Leu Val Ser Val Ser Ala Leu Thr Leu Ala Thr Glu Thr Val Arg Ser
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 Ile Leu Lys Ile Asp Asp Val Val Asn Thr Arg
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<210> 615

<211> 1057

<212> DNA

<213> Mus musculus

<400> 615

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15

20

25

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Cys Lys Arg Arg Tyr Asn Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys			
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ttt aac tgc ttg ccg ata gca gcc atc gtg gac gag aag ata ttc tgc			712
Phe Asn Cys Leu Pro Ile Ala Ala Ile Val Asp Glu Lys Ile Phe Cys			
160	165	170	
tgt cat gga ggt tta tca cca gat ctt caa tct atg gag cag att cgg			760
Cys His Gly Gly Leu Ser Pro Asp Leu Gln Ser Met Glu Gln Ile Arg			
175	180	185	
cga att atg aga cca act gat gta cca gat caa ggt ctt ctt tgt gat			808

Arg Ile Met Arg Pro Thr Asp Val Pro Asp Gln Gly Leu Leu Cys Asp
 190 195 200
 ctt ttg tgg tct gac ccc gat aaa gat gtc tta ggc tgg ggt gaa aat 856
 Leu Leu Trp Ser Asp Pro Asp Lys Asp Val Leu Gly Trp Gly Glu Asn
 205 210 215
 gac aga gga gtg tcc ttc aca ttt ggt gca gaa gtg gtt gca aaa ttt 904
 Asp Arg Gly Val Ser Phe Thr Phe Gly Ala Glu Val Val Ala Lys Phe
 220 225 230 235
 ctc cat aag cat gat ttg gat ctt ata tgt aga gcc cat cag gtg gtt 952
 Leu His Lys His Asp Leu Asp Leu Ile Cys Arg Ala His Gln Val Val
 240 245 250
 gaa gat ggc tat gag ttt ttt gca aag agg cag tta gtc act ctg ttt 1000
 Glu Asp Gly Tyr Glu Phe Phe Ala Lys Arg Gln Leu Val Thr Leu Phe
 255 260 265
 tct gca ccc aac tac tgt ggc gag ttt gac aat gca ggc gcc atg atg 1048
 Ser Ala Pro Asn Tyr Cys Gly Glu Phe Asp Asn Ala Gly Ala Met Met
 270 275 280
 agt gtg gat gag acc ctc atg tgt tcc ttc cag att tta aag cct gca 1096
 Ser Val Asp Glu Thr Leu Met Cys Ser Phe Gln Ile Leu Lys Pro Ala
 285 290 295
 gag aaa aag aag ccc aac gcc acg aga cct gtc aca cca cca cgg ggt 1144
 Glu Lys Lys Lys Pro Asn Ala Thr Arg Pro Val Thr Pro Pro Arg Gly
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 ata gtc aca aag caa gca aag aaa tag atgtcacttg aactgcctg 1191
 Ile Val Thr Lys Gln Ala Lys Lys
 320
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 ggttatagca gcaagccaag cacttcattc tcaagagagc attttgtttt gaacctctgt 1371

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<210> 625

<211> 323

<212> PRT

<213> Mus musculus

<400> 625

Met Ala Asp Ile Asp Lys Leu Asn Ile Asp Ser Ile Ile Gln Arg Leu

1

5

10

15

Leu Glu Val Arg Gly Ser Lys Pro Gly Lys Asn Val Gln Leu Gln Glu

20

25

30

Asn Glu Ile Arg Gly Leu Cys Leu Lys Ser Arg Glu Ile Phe Leu Ser

35

40

45

1
 Gln Pro Ile Leu Leu Glu Leu Glu Ala Pro Leu Lys Ile Cys Gly Asp
 50 55 60
 Ile His Gly Gln Tyr Tyr Asp Leu Leu Arg Leu Phe Glu Tyr Gly Gly
 65 70 75 80
 Phe Pro Pro Glu Ser Asn Tyr Leu Phe Leu Gly Asp Tyr Val Asp Arg
 85 90 95
 Gly Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu Leu Ala Tyr Lys Ile
 100 105 110
 Lys Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly Asn His Glu Cys Ala
 115 120 125
 Ser Ile Asn Arg Ile Tyr Gly Phe Tyr Asp Glu Cys Lys Arg Arg Tyr
 130 135 140
 Asn Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys Phe Asn Cys Leu Pro
 145 150 155 160
 Ile Ala Ala Ile Val Asp Glu Lys Ile Phe Cys Cys His Gly Gly Leu
 165 170 175
 Ser Pro Asp Leu Gln Ser Met Glu Gln Ile Arg Arg Ile Met Arg Pro
 180 185 190
 Thr Asp Val Pro Asp Gln Gly Leu Leu Cys Asp Leu Leu Trp Ser Asp
 195 200 205
 Pro Asp Lys Asp Val Leu Gly Trp Gly Glu Asn Asp Arg Gly Val Ser
 210 215 220
 Phe Thr Phe Gly Ala Glu Val Val Ala Lys Phe Leu His Lys His Asp
 225 230 235 240
 Leu Asp Leu Ile Cys Arg Ala His Gln Val Val Glu Asp Gly Tyr Glu
 245 250 255
 Phe Phe Ala Lys Arg Gln Leu Val Thr Leu Phe Ser Ala Pro Asn Tyr
 260 265 270
 Cys Gly Glu Phe Asp Asn Ala Gly Ala Met Met Ser Val Asp Glu Thr

1546/2644

40	45	50	
gaa gca cca ctg aag att tgt gga gac att cat gga caa tat aca gac			305
Glu Ala Pro Leu Lys Ile Cys Gly Asp Ile His Gly Gln Tyr Thr Asp			
55	60	65	70
tta cta aga tta ttt gaa tat gga ggt ttt cca cca gaa gcc aac tat			353
Leu Leu Arg Leu Phe Glu Tyr Gly Gly Phe Pro Pro Glu Ala Asn Tyr			
	75	80	85
ctt ttc tta gga gat tat gtg gac aga gga aag cag tct ttg gaa acc			401
Leu Phe Leu Gly Asp Tyr Val Asp Arg Gly Lys Gln Ser Leu Glu Thr			
	90	95	100
atc tgt ttg cta ttg gct tac aaa atc aaa tac ccg gag aac ttc ttt			449
Ile Cys Leu Leu Leu Ala Tyr Lys Ile Lys Tyr Pro Glu Asn Phe Phe			
	105	110	115
ctt cta aga gga aac cat gag tgt gct agc atc aat cgc att tat gga			497
Leu Leu Arg Gly Asn His Glu Cys Ala Ser Ile Asn Arg Ile Tyr Gly			
	120	125	130
ttc tac gat gag tgt aaa cga aga ttt aat att aaa ttg tgg aag aca			545
Phe Tyr Asp Glu Cys Lys Arg Arg Phe Asn Ile Lys Leu Trp Lys Thr			
135	140	145	150
ttc act gat tgt ttt aac tgt ctg cct ata gct gct att gtt gat gag			593
Phe Thr Asp Cys Phe Asn Cys Leu Pro Ile Ala Ala Ile Val Asp Glu			
	155	160	165
aaa atc ttc tgt tgt cat gga gga ctg tca cca gac cta caa tct atg			641
Lys Ile Phe Cys Cys His Gly Gly Leu Ser Pro Asp Leu Gln Ser Met			
	170	175	180
gaa cag att cgg aga att atg aga ccc act gac gta cct gat aca ggt			689
Glu Gln Ile Arg Arg Ile Met Arg Pro Thr Asp Val Pro Asp Thr Gly			
	185	190	195
ttg ctt tgt gac tta ctg tgg tcc gac cca gat aag gat gtg caa ggc			737

Leu Leu Cys Asp Leu Leu Trp Ser Asp Pro Asp Lys Asp Val Gln Gly
 200 205 210
 tgg gga gaa aat gac cgt ggt gtt tct ttt act ttt gga gct gat gta 785
 Trp Gly Glu Asn Asp Arg Gly Val Ser Phe Thr Phe Gly Ala Asp Val
 215 220 225 230
 gtc agt aaa ttt ctg aat cgt cat gat tta gac ttg att tgt cga gct 833
 Val Ser Lys Phe Leu Asn Arg His Asp Leu Asp Leu Ile Cys Arg Ala
 235 240 245
 cat cag gtg gtg gaa gac gga tat gaa ttt ttt gct aaa cga cag ttg 881
 His Gln Val Val Glu Asp Gly Tyr Glu Phe Phe Ala Lys Arg Gln Leu
 250 255 260
 gta acc tta ttt tct gcc cca aat tac tgt ggc gag ttt gac aat gct 929
 Val Thr Leu Phe Ser Ala Pro Asn Tyr Cys Gly Glu Phe Asp Asn Ala
 265 270 275
 ggt ggt atg atg agt gtg gat gag act ttg atg tgt tca ttc cag ata 977
 Gly Gly Met Met Ser Val Asp Glu Thr Leu Met Cys Ser Phe Gln Ile
 280 285 290
 ttg aaa cca tct gaa aag aaa gct aag tac cag tat ggt ggg ctg aat 1025
 Leu Lys Pro Ser Glu Lys Lys Ala Lys Tyr Gln Tyr Gly Gly Leu Asn
 295 300 305 310
 tct gga cgt cct gtc act ccg cct cga aca gct aat cca ccg aag aaa 1073
 Ser Gly Arg Pro Val Thr Pro Pro Arg Thr Ala Asn Pro Pro Lys Lys
 315 320 325
 agg tga agacaggaat tctagaaaga gaaacatca gatttgtaa ggacatactt 1129
 Arg
 cataatatat aagtggtcac tgtaaaacca tccagccatt cgacaccctt tatgatgtca 1189
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<210> 627

<211> 327

<212> PRT

<213> Mus musculus

<400> 627

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Glu	Val	Arg	Gly	Cys	Arg	Pro	Gly	Lys	Ile	Val	Gln	Met	Thr	Glu	Ala
				20					25					30	
Glu	Val	Arg	Gly	Leu	Cys	Ile	Lys	Ser	Arg	Glu	Ile	Phe	Leu	Ser	Gln
				35					40					45	
Pro	Ile	Leu	Leu	Glu	Leu	Glu	Ala	Pro	Leu	Lys	Ile	Cys	Gly	Asp	Ile

50	55	60
His Gly Gln Tyr Thr Asp Leu Leu Arg Leu Phe Glu Tyr Gly Gly Phe		
65	70	75
Pro Pro Glu Ala Asn Tyr Leu Phe Leu Gly Asp Tyr Val Asp Arg Gly		80
	85	90
Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu Leu Ala Tyr Lys Ile Lys		95
100	105	110
Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly Asn His Glu Cys Ala Ser		
115	120	125
Ile Asn Arg Ile Tyr Gly Phe Tyr Asp Glu Cys Lys Arg Arg Phe Asn		
130	135	140
Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys Phe Asn Cys Leu Pro Ile		
145	150	155
Ala Ala Ile Val Asp Glu Lys Ile Phe Cys Cys His Gly Gly Leu Ser		160
	165	170
Pro Asp Leu Gln Ser Met Glu Gln Ile Arg Arg Ile Met Arg Pro Thr		175
180	185	190
Asp Val Pro Asp Thr Gly Leu Leu Cys Asp Leu Leu Trp Ser Asp Pro		
195	200	205
Asp Lys Asp Val Gln Gly Trp Gly Glu Asn Asp Arg Gly Val Ser Phe		
210	215	220
Thr Phe Gly Ala Asp Val Val Ser Lys Phe Leu Asn Arg His Asp Leu		
225	230	235
Asp Leu Ile Cys Arg Ala His Gln Val Val Glu Asp Gly Tyr Glu Phe		240
	245	250
Phe Ala Lys Arg Gln Leu Val Thr Leu Phe Ser Ala Pro Asn Tyr Cys		255
260	265	270
Gly Glu Phe Asp Asn Ala Gly Gly Met Met Ser Val Asp Glu Thr Leu		
275	280	285

Met Cys Ser Phe Gln Ile Leu Lys Pro Ser Glu Lys Lys Ala Lys Tyr
 290 295 300
 Gln Tyr Gly Gly Leu Asn Ser Gly Arg Pro Val Thr Pro Pro Arg Thr
 305 310 315 320
 Ala Asn Pro Pro Lys Lys Arg
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<210> 628

<211> 415

<212> DNA

<213> Mus musculus

<400> 628

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 caacagcaga gticcaggac atcaagccca tgcgggacca gatcatccgc gtgaacggta 180
 cgagcgcgta cccatgatcc tggtaggcaa caaggtaggac ttggagggtg aacgtgaggt 240
 ctccatggc gagggtaagg ccctggcgnn nggagtggag ctgccccttc atggagacat 300
 cggccaaaaa caaagcctca gtggatgagc tattcgcaga gatcgtgagg cagatgaact 360
 acgcggcaca gccaaaggcg acgagggtg ctgctcggcc tgcgtgaccc tgtga 415

<210> 629

<211> 1179

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (807)

<400> 629

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agg ccc ttc cct gat ggc ctg gca gag gac atc gat aag ggt gag gtg	96
Arg Pro Phe Pro Asp Gly Leu Ala Glu Asp Ile Asp Lys Gly Glu Val	
20 25 30	
tct gcc cgc cag gag ctc aag gca cgt gcc cgc tac ctg gcc gaa aag	144
Ser Ala Arg Gln Glu Leu Lys Ala Arg Ala Arg Tyr Leu Ala Glu Lys	
35 40 45	
tat gag tgg gac gtt gct gaa gcc cgc aag atc tgg tgc ttt ggc cct	192
Tyr Glu Trp Asp Val Ala Glu Ala Arg Lys Ile Trp Cys Phe Gly Pro	
50 55 60	
gat ggc act ggc ccc aac att ctc acc gac atc acc aag ggt gtg cag	240
Asp Gly Thr Gly Pro Asn Ile Leu Thr Asp Ile Thr Lys Gly Val Gln	
65 70 75 80	
tac ctg aat gag atc aag gac agt gtg gtg gct ggc ttc cag tgg gct	288
Tyr Leu Asn Glu Ile Lys Asp Ser Val Val Ala Gly Phe Gln Trp Ala	
85 90 95	
act aag gag ggc gct ctc tgt gag gaa aac atg cgt ggt gtg cgg ttt	336
Thr Lys Glu Gly Ala Leu Cys Glu Glu Asn Met Arg Gly Val Arg Phe	
100 105 110	
gat gtt cat gat gtg acc ctg cat gct gat gcc att cac cgg gga ggt	384
Asp Val His Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly	
115 120 125	
ggc cag atc atc ccc aca gca cgc cgc tgc ctg tat gcc agt gtg ctg	432
Gly Gln Ile Ile Pro Thr Ala Arg Arg Cys Leu Tyr Ala Ser Val Leu	
130 135 140	

acc gca cag ccc cgc ctc atg gag cct atc tat ctg gtg gag atc cag 480
 Thr Ala Gln Pro Arg Leu Met Glu Pro Ile Tyr Leu Val Glu Ile Gln
 145 150 155 160
 tgt cct gag caa gtg gtg ggt ggc atc tac ggt gtc ctg aac agg aag 528
 Cys Pro Glu Gln Val Val Gly Gly Ile Tyr Gly Val Leu Asn Arg Lys
 165 170 175
 cgt ggc cat gtg ttt gag gag tcc cag gtg gct ggt acc ccc atg ttt 576
 Arg Gly His Val Phe Glu Glu Ser Gln Val Ala Gly Thr Pro Met Phe
 180 185 190
 gtg gtc aag gca tac ctg cct gtc aat gag tcc ttt ggc ttc acc gct 624
 Val Val Lys Ala Tyr Leu Pro Val Asn Glu Ser Phe Gly Phe Thr Ala
 195 200 205
 gat ctg cga tcc aac acc ggc ggc cag gcc ttc ccc cag tgc gtg ttt 672
 Asp Leu Arg Ser Asn Thr Gly Gly Gln Ala Phe Pro Gln Cys Val Phe
 210 215 220
 gac cac tgg cag atc ctg cct ggg gat cct ttt gac aac agc agc cgc 720
 Asp His Trp Gln Ile Leu Pro Gly Asp Pro Phe Asp Asn Ser Ser Arg
 225 230 235 240
 ccc agc caa gtg gta gct gag acg cgc aac cac aac ggc ctg aaa gag 768
 Pro Ser Gln Val Val Ala Glu Thr Arg Asn His Asn Gly Leu Lys Glu
 245 250 255
 ggc atc cca gcg ctg gac aac ttc ctg gac aaa ctg tag gcagcctgat 817
 Gly Ile Pro Ala Leu Asp Asn Phe Leu Asp Lys Leu
 260 265
 actgccacat gctgcacagt gcccacccat cagaagacac cttgagactg tccaagtgt 877
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<210> 630

<211> 268

<212> PRT

<213> Mus musculus

<400> 630

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 Ser Ala Arg Gln Glu Leu Lys Ala Arg Ala Arg Tyr Leu Ala Glu Lys
 35 40 45
 Tyr Glu Trp Asp Val Ala Glu Ala Arg Lys Ile Trp Cys Phe Gly Pro
 50 55 60
 Asp Gly Thr Gly Pro Asn Ile Leu Thr Asp Ile Thr Lys Gly Val Gln
 65 70 75 80
 Tyr Leu Asn Glu Ile Lys Asp Ser Val Val Ala Gly Phe Gln Trp Ala
 85 90 95
 Thr Lys Glu Gly Ala Leu Cys Glu Glu Asn Met Arg Gly Val Arg Phe
 100 105 110
 Asp Val His Asp Val Thr Leu His Ala Asp Ala Ile His Arg Gly Gly
 115 120 125
 Gly Gln Ile Ile Pro Thr Ala Arg Arg Cys Leu Tyr Ala Ser Val Leu
 130 135 140
 Thr Ala Gln Pro Arg Leu Met Glu Pro Ile Tyr Leu Val Glu Ile Gln
 145 150 155 160

Cys Pro Glu Gln Val Val Gly Gly Ile Tyr Gly Val Leu Asn Arg Lys
 165 170 175
 Arg Gly His Val Phe Glu Glu Ser Gln Val Ala Gly Thr Pro Met Phe
 180 185 190
 Val Val Lys Ala Tyr Leu Pro Val Asn Glu Ser Phe Gly Phe Thr Ala
 195 200 205
 Asp Leu Arg Ser Asn Thr Gly Gly Gln Ala Phe Pro Gln Cys Val Phe
 210 215 220
 Asp His Trp Gln Ile Leu Pro Gly Asp Pro Phe Asp Asn Ser Ser Arg
 225 230 235 240
 Pro Ser Gln Val Val Ala Glu Thr Arg Asn His Asn Gly Leu Lys Glu
 245 250 255
 Gly Ile Pro Ala Leu Asp Asn Phe Leu Asp Lys Leu
 260 265

<210> 631

<211> 710

<212> DNA

<213> Mus musculus

<400> 631

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 aagtigggcg tggctagctc ccactgagga ggacctgagc tataggtaag actccatcct 240
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 agttccaatt cagaagctgt ttccagagac tctggctagg tcacaagggt gcggcaccca 420
 cagctcccct tcctaagtgt ccttgcattgt cgtaaagctt agaccagct tcaaatgcct 480

ccttctttat gcttcaggaa ccttcagagg ctacttctga gacagtgggt cgttacacgt 540
 tctacataga ggagaaatat ttcaccagca gccatgaaaa cgcttcatt catttcagt 600
 tgctaccctg actgggctc ctgtaatgc tctgttaaaa gaaaaaaaaa atctcagagc 660
 ctctaagtgc caaacagacc atgcccgcgt ggatccggat cagaagaaag 710

<210> 632

<211> 449

<212> DNA

<213> Mus musculus

<400> 632

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 gacaagttca gtgcgatgaa gtacgagcag ggcacgggct gttggcaggg cccaaccgat 180
 ccaccacagt gccctgctgt gtggcaaaga gactgtgggt accagcacca cggagcccag 240
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<210> 633

<211> 1710

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (108).. (1052)

<400> 633

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                                         Met Ala Gly
                                         1
ccc cag gcc ctc gcg ttc ggg ctc ctg ctc gcg gtg gtc aca gcg acg 164
Pro Gln Ala Leu Ala Phe Gly Leu Leu Leu Ala Val Val Thr Ala Thr
      5              10              15
ctg gcc gcg gct cag aga gac tgt gtc tgt gac aac tac aag ctg gca 212
Leu Ala Ala Ala Gln Arg Asp Cys Val Cys Asp Asn Tyr Lys Leu Ala
      20              25              30              35
aca agt tgc tct ctg aat gaa tat ggt gaa tgc cag tgt act tcc tat 260
Thr Ser Cys Ser Leu Asn Glu Tyr Gly Glu Cys Gln Cys Thr Ser Tyr
              40              45              50
ggt aca cag aat act gtc att tgc tcc aaa ctg gcg tct aaa tgc ttg 308
Gly Thr Gln Asn Thr Val Ile Cys Ser Lys Leu Ala Ser Lys Cys Leu
              55              60              65
gcg atg aaa gca gaa atg act cac agc aag tct ggg agg agg ata aag 356
Ala Met Lys Ala Glu Met Thr His Ser Lys Ser Gly Arg Arg Ile Lys
              70              75              80
ccc gaa ggc atc cag aac aac gat ggg ctg tac gac ccc gac tgc gac 404
Pro Glu Gly Ile Gln Asn Asn Asp Gly Leu Tyr Asp Pro Asp Cys Asp
              85              90              95
gag cag ggg ctc ttc aaa gcc aag cag tgc aac ggc acc gcc acg tgc 452
Glu Gln Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly Thr Ala Thr Cys
100              105              110              115
tgg tgt gtc aac acc gcc gga gtc cga aga acc gac aag gac acg gag 500
Trp Cys Val Asn Thr Ala Gly Val Arg Arg Thr Asp Lys Asp Thr Glu
              120              125              130

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atc acg tgc tcc gag cgc gtg agg acc tac tgg atc atc att gaa cta 548
 Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile Ile Ile Glu Leu
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 Lys His Lys Glu Arg Glu Ser Pro Tyr Asp His Gln Ser Leu Gln Thr
 150 155 160
 gcg ctt caa gag gcg ttc aca tct cga tat aag ctg aat cag aaa ttt 644
 Ala Leu Gln Glu Ala Phe Thr Ser Arg Tyr Lys Leu Asn Gln Lys Phe
 165 170 175
 atc aaa aac att atg tat gag aat aat gtt atc acc att gat ctg atg 692
 Ile Lys Asn Ile Met Tyr Glu Asn Asn Val Ile Thr Ile Asp Leu Met
 180 185 190 195
 caa aac tct tct cag aaa aca caa gac gac gtg gac ata gct gat gtg 740
 Gln Asn Ser Ser Gln Lys Thr Gln Asp Asp Val Asp Ile Ala Asp Val
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 gct tac tat ttt gaa aaa gat gtg aag ggg gag tcc ctg ttc cat tct 788
 Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu Phe His Ser
 215 220 225
 tct aag agc atg gac ctg aga gtg aac gga gag ccg ctc gat ctg gac 836
 Ser Lys Ser Met Asp Leu Arg Val Asn Gly Glu Pro Leu Asp Leu Asp
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 ccc ggg cag act ctg att tac tac gtt gat gaa aag gca ccc gag ttc 884
 Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala Pro Glu Phe
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 tcc atg cag ggc ctc acg gcc ggg atc atc gct gtc att gtg gtg gtg 932
 Ser Met Gln Gly Leu Thr Ala Gly Ile Ile Ala Val Ile Val Val Val
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 tca tta gca gtc atc gcg ggg att gtt gtc ctg gtt ata tct aca agg 980
 Ser Leu Ala Val Ile Ala Gly Ile Val Val Leu Val Ile Ser Thr Arg

280	285	290	
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Lys Lys Ser Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly Glu			
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Ile His Arg Glu Leu Asn Ala			
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<211> 314

<212> PRT

<213> Mus musculus

<400> 634

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 Gln Lys Phe Ile Lys Asn Ile Met Tyr Glu Asn Asn Val Ile Thr Ile
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 Asp Leu Met Gln Asn Ser Ser Gln Lys Thr Gln Asp Asp Val Asp Ile
 195 200 205
 Ala Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu
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 Phe His Ser Ser Lys Ser Met Asp Leu Arg Val Asn Gly Glu Pro Leu
 225 230 235 240
 Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala
 245 250 255
 Pro Glu Phe Ser Met Gln Gly Leu Thr Ala Gly Ile Ile Ala Val Ile

260 265 270
 Val Val Val Ser Leu Ala Val Ile Ala Gly Ile Val Val Leu Val Ile
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<211> 122

<212> DNA

<213> Mus musculus

<400> 635

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<211> 499

<212> DNA

<213> Mus musculus

<400> 636

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<210> 637

<211> 386

<212> DNA

<213> Mus musculus

<400> 637

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<210> 638

<211> 526

<212> DNA

<213> Mus musculus

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acagccaccc ccaccaatac ctgcaaatgg ccagcaggcc agcagccaga atgaaggctt 300
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<210> 639

<211> 476

<212> DNA

<213> Mus musculus

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<210> 640

<211> 3015

<212> DNA

<213> Mus musculus

<400> 640

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<210> 641

<211> 2897

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (93).. (1355)

<400> 641

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Met Leu Ser Ala Ser Ala Asn
1 5
atg gct gcg gcc ctg cgg gct gcg ggc gct ctg ctc cgc gag ccg ctg 161
Met Ala Ala Ala Leu Arg Ala Ala Gly Ala Leu Leu Arg Glu Pro Leu
10 15 20
gtg cac ggc agc tca agg gcc tgt cag cca tgg agg tgc cag tgc ggt 209
Val His Gly Ser Ser Arg Ala Cys Gln Pro Trp Arg Cys Gln Ser Gly
25 30 35
gct gcg gtg gca gcc acc acg gag aag gta cat cat gcc aag acc acc 257
Ala Ala Val Ala Ala Thr Thr Glu Lys Val His His Ala Lys Thr Thr
40 45 50 55
aaa ccc caa gct caa cca gaa agg agg aag cca aaa acg ggc ata ttg 305
Lys Pro Gln Ala Gln Pro Glu Arg Arg Lys Pro Lys Thr Gly Ile Leu
60 65 70
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Met Leu Asn Met Gly Gly Pro Glu Thr Leu Gly Glu Val Gln Asp Phe
75 80 85
ctt cag agg ctc ttc ctg gac cga gac ctc atg aca ctt ccc att caa 401
Leu Gln Arg Leu Phe Leu Asp Arg Asp Leu Met Thr Leu Pro Ile Gln
90 95 100
aat aag ctg gca cca ttc atc gcc aaa cgc cga acc ccc aaa att caa 449
Asn Lys Leu Ala Pro Phe Ile Ala Lys Arg Arg Thr Pro Lys Ile Gln
105 110 115
gag cgc aga atc gga ggt gga tcc ccc atc aag atg tgg act tcc aag 497
Glu Arg Arg Ile Gly Gly Gly Ser Pro Ile Lys Met Trp Thr Ser Lys

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gca cct cac aaa tac tat att gga ttc cgg tac gtc cat ccc ctg aca	593			
Ala Pro His Lys Tyr Tyr Ile Gly Phe Arg Tyr Val His Pro Leu Thr				
155	160	165		
gaa gag gca att gaa gag atg gag aga gat gga cta gag agg gcc att	641			
Glu Glu Ala Ile Glu Glu Met Glu Arg Asp Gly Leu Glu Arg Ala Ile				
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gct ttc aca cag tat cca cag tat agc tgc tcc acc aca ggc agc agc	689			
Ala Phe Thr Gln Tyr Pro Gln Tyr Ser Cys Ser Thr Thr Gly Ser Ser				
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Leu Asn Ala Ile Tyr Arg Tyr Tyr Asn Glu Val Gly Gln Lys Pro Thr				
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Gln Cys Phe Ala Asp His Ile Leu Lys Glu Leu Asn His Phe Pro Glu				
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gag aag aga agc gag gtg gtc att ctg ttt tct gcc cac tcc ctg ccg	881			
Glu Lys Arg Ser Glu Val Val Ile Leu Phe Ser Ala His Ser Leu Pro				
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265	270	275		
act gtc cac aaa gtc atg gaa aag ctg ggt tac ccc aac ccc tac cga	977			

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<211> 420

<212> PRT

<213> Mus musculus

<400> 642

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 Val His His Ala Lys Thr Thr Lys Pro Gln Ala Gln Pro Glu Arg Arg
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 Lys Pro Lys Thr Gly Ile Leu Met Leu Asn Met Gly Gly Pro Glu Thr
 65 70 75 80
 Leu Gly Glu Val Gln Asp Phe Leu Gln Arg Leu Phe Leu Asp Arg Asp
 85 90 95
 Leu Met Thr Leu Pro Ile Gln Asn Lys Leu Ala Pro Phe Ile Ala Lys
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 Arg Arg Thr Pro Lys Ile Gln Glu Arg Arg Ile Gly Gly Gly Ser Pro
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 Ile Lys Met Trp Thr Ser Lys Gln Gly Glu Gly Met Val Lys Leu Leu
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 Asp Glu Leu Ser Pro Ala Thr Ala Pro His Lys Tyr Tyr Ile Gly Phe
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 Arg Tyr Val His Pro Leu Thr Glu Glu Ala Ile Glu Glu Met Glu Arg
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 Cys Ser Thr Thr Gly Ser Ser Leu Asn Ala Ile Tyr Arg Tyr Tyr Asn
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 210 215 220

Pro Thr His Pro Leu Leu Ile Gln Cys Phe Ala Asp His Ile Leu Lys
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<210> 643

<211> 4128

<212> DNA

<213> Mus musculus

<400> 643

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<211> 1702

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (25).. (987)

<400> 644

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 Pro Glu Gln Leu Arg Lys Leu Phe Ile Gly Gly Leu Ser Phe Glu Thr
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 acc gac gag agt ctg agg agc cat ttt gag caa tgg gga aca cta aca 147
 Thr Asp Glu Ser Leu Arg Ser His Phe Glu Gln Trp Gly Thr Leu Thr
 30 35 40
 gac tgt gtg gta atg aga gat cca aac acc aag aga tcc agg ggc ttt 195
 Asp Cys Val Val Met Arg Asp Pro Asn Thr Lys Arg Ser Arg Gly Phe
 45 50 55
 ggg ttt gtc aca tat gcc act gtg gaa gaa gtg gat gct gcc atg aat 243
 Gly Phe Val Thr Tyr Ala Thr Val Glu Glu Val Asp Ala Ala Met Asn
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 Ala Arg Pro His Lys Val Asp Gly Arg Val Val Glu Pro Lys Arg Ala
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 Val Ser Arg Glu Asp Ser Gln Arg Pro Gly Ala His Leu Thr Val Lys
 90 95 100 105
 aag atc ttt gtt ggt ggt att aaa gaa gac act gaa gaa cat cac cta 387
 Lys Ile Phe Val Gly Gly Ile Lys Glu Asp Thr Glu Glu His His Leu
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 cga gat tat ttt gag cag tat ggg aag att gaa gtg ata gaa att atg 435
 Arg Asp Tyr Phe Glu Gln Tyr Gly Lys Ile Glu Val Ile Glu Ile Met
 125 130 135
 act gac aga ggc agt ggg aaa aag agg ggc ttt gct ttt gtt acc ttt 483
 Thr Asp Arg Gly Ser Gly Lys Lys Arg Gly Phe Ala Phe Val Thr Phe
 140 145 150
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 Asp Asp His Asp Ser Val Asp Lys Ile Val Ile Gln Lys Tyr His Thr

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Val Asn Gly His Asn Cys Glu Val Arg Lys Ala Leu Ser Lys Gln Glu			
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atg gct agt gct tca tcc agt cag aga ggt cgc agt ggt tct gga aac	627		
Met Ala Ser Ala Ser Ser Ser Gln Arg Gly Arg Ser Gly Ser Gly Asn			
190	195	200	
ttt ggt ggt ggt cgt gga ggc ggt ttt ggt ggc aat gac aat ttt ggt	675		
Phe Gly Gly Gly Arg Gly Gly Gly Phe Gly Gly Asn Asp Asn Phe Gly			
205	210	215	
cga gga ggg aac ttc agt ggt cgt ggt ggc ttt ggt ggc agc cgt ggt	723		
Arg Gly Gly Asn Phe Ser Gly Arg Gly Gly Phe Gly Gly Ser Arg Gly			
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ggt ggt gga tat ggt ggc agt ggg gat ggc tat aat gga ttt ggc aat	771		
Gly Gly Gly Tyr Gly Gly Ser Gly Asp Gly Tyr Asn Gly Phe Gly Asn			
235	240	245	
gat gga agc aat ttt gga ggt ggt gga agc tac aat gat ttt ggc aat	819		
Asp Gly Ser Asn Phe Gly Gly Gly Gly Ser Tyr Asn Asp Phe Gly Asn			
250	255	260	265
tac aac aat cag tct tcc aat ttt ggg ccg atg aag gga gga aac ttt	867		
Tyr Asn Asn Gln Ser Ser Asn Phe Gly Pro Met Lys Gly Gly Asn Phe			
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gga ggc agg agc tct ggc cct tat ggt ggt gga ggc cag tac ttt gct	915		
Gly Gly Arg Ser Ser Gly Pro Tyr Gly Gly Gly Gly Gln Tyr Phe Ala			
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aaa cca cgg aac caa ggt ggc tat ggc ggt tcc agc agc agc agt agc	963		
Lys Pro Arg Asn Gln Gly Gly Tyr Gly Gly Ser Ser Ser Ser Ser Ser			
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Tyr Gly Ser Gly Arg Arg Phe

315

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<211> 320

<212> PRT

<213> Mus musculus

<400> 645

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25

30

His Phe Glu Gln Trp Gly Thr Leu Thr Asp Cys Val Val Met Arg Asp

35

40

45

Pro Asn Thr Lys Arg Ser Arg Gly Phe Gly Phe Val Thr Tyr Ala Thr

50

55

60

Val Glu Glu Val Asp Ala Ala Met Asn Ala Arg Pro His Lys Val Asp
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 Arg Pro Gly Ala His Leu Thr Val Lys Lys Ile Phe Val Gly Gly Ile
 100 105 110
 Lys Glu Asp Thr Glu Glu His His Leu Arg Asp Tyr Phe Glu Gln Tyr
 115 120 125
 Gly Lys Ile Glu Val Ile Glu Ile Met Thr Asp Arg Gly Ser Gly Lys
 130 135 140
 Lys Arg Gly Phe Ala Phe Val Thr Phe Asp Asp His Asp Ser Val Asp
 145 150 155 160
 Lys Ile Val Ile Gln Lys Tyr His Thr Val Asn Gly His Asn Cys Glu
 165 170 175
 Val Arg Lys Ala Leu Ser Lys Gln Glu Met Ala Ser Ala Ser Ser Ser
 180 185 190
 Gln Arg Gly Arg Ser Gly Ser Gly Asn Phe Gly Gly Gly Arg Gly Gly
 195 200 205
 Gly Phe Gly Gly Asn Asp Asn Phe Gly Arg Gly Gly Asn Phe Ser Gly
 210 215 220
 Arg Gly Gly Phe Gly Gly Ser Arg Gly Gly Gly Gly Tyr Gly Gly Ser
 225 230 235 240
 Gly Asp Gly Tyr Asn Gly Phe Gly Asn Asp Gly Ser Asn Phe Gly Gly
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 Phe Gly Pro Met Lys Gly Gly Asn Phe Gly Gly Arg Ser Ser Gly Pro
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<210> 646

<211> 912

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (912)

<400> 646

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 Tyr Gly Thr Val Tyr Lys Ala Arg Asp Pro His Ser Gly His Phe Val
 20 25 30
 gcc ctc aag agt gtg aga gtt cct aat gga gga gca gct gga ggg ggc 144
 Ala Leu Lys Ser Val Arg Val Pro Asn Gly Gly Ala Ala Gly Gly Gly
 35 40 45
 ctt ccc gtc agc aca gtt cgt gag gtg gcc ttg tta agg agg ctg gag 192
 Leu Pro Val Ser Thr Val Arg Glu Val Ala Leu Leu Arg Arg Leu Glu
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 Ala Phe Glu His Pro Asn Val Val Arg Leu Met Asp Val Cys Ala Thr
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Ser Arg Thr Asp Arg Asp Ile Lys Val Thr Leu Val Phe Glu His Ile	
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Asp Gln Asp Leu Arg Thr Tyr Leu Asp Lys Ala Pro Pro Pro Gly Leu	
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Pro Val Glu Thr Ile Lys Asp Leu Met Arg Gln Phe Leu Ser Gly Leu	
115 120 125	
gat ttt ctt cat gca aac tgc att gtt cac cgg gac ctg aag cca gag	432
Asp Phe Leu His Ala Asn Cys Ile Val His Arg Asp Leu Lys Pro Glu	
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Asn Ile Leu Val Thr Ser Asn Gly Thr Val Lys Leu Ala Asp Phe Gly	
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Leu Ala Arg Ile Tyr Ser Tyr Gln Met Ala Leu Thr Pro Val Val Val	
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Thr Leu Trp Tyr Arg Ala Pro Glu Val Leu Leu Gln Ser Thr Tyr Ala	
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aca ccc gtg gac atg tgg agc gtt ggc tgt atc ttt gca gag atg ttc	624
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Arg Arg Lys Pro Leu Phe Cys Gly Asn Ser Glu Ala Asp Gln Leu Gly	
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Lys Ile Phe Asp Leu Ile Gly Leu Pro Pro Glu Asp Asp Trp Pro Arg	

1581/2644

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Asp Gln Asp Leu Arg Thr Tyr Leu Asp Lys Ala Pro Pro Pro Gly Leu			
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Pro Val Glu Thr Ile Lys Asp Leu Met Arg Gln Phe Leu Ser Gly Leu			
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Asp Phe Leu His Ala Asn Cys Ile Val His Arg Asp Leu Lys Pro Glu			
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Asn Ile Leu Val Thr Ser Asn Gly Thr Val Lys Leu Ala Asp Phe Gly			
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Leu Ala Arg Ile Tyr Ser Tyr Gln Met Ala Leu Thr Pro Val Val Val			
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Thr Leu Trp Tyr Arg Ala Pro Glu Val Leu Leu Gln Ser Thr Tyr Ala			
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Arg Arg Lys Pro Leu Phe Cys Gly Asn Ser Glu Ala Asp Gln Leu Gly			
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Lys Ile Phe Asp Leu Ile Gly Leu Pro Pro Glu Asp Asp Trp Pro Arg			
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Glu Val Ser Leu Pro Arg Gly Ala Phe Ala Pro Arg Gly Pro Arg Pro			
	245	250	255
Val Gln Ser Val Val Pro Glu Met Glu Glu Ser Gly Ala Gln Leu Leu			
	260	265	270
Leu Glu Met Leu Thr Phe Asn Pro His Lys Arg Ile Ser Ala Phe Arg			
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<210> 648

<211> 4074

<212> DNA

<213> *Mus musculus*

<400> 648

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<211> 2511

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1212)

<400> 649

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 Pro Ala Arg Val Asp Phe Ser Leu Ala Gly Ala Leu Asn Ala Gly Phe
 20 25 30
 aag gag aca cgg gcg agc gag cgt gca gag atg atg gag ctc aat gac 144
 Lys Glu Thr Arg Ala Ser Glu Arg Ala Glu Met Met Glu Leu Asn Asp
 35 40 45
 cgc ttt gct agc tac atc gag aag gtc cgc ttc ctg gaa cag caa aac 192
 Arg Phe Ala Ser Tyr Ile Glu Lys Val Arg Phe Leu Glu Gln Gln Asn
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 Lys Ala Leu Ala Ala Glu Leu Asn Gln Leu Arg Ala Lys Glu Pro Thr
 65 70 75 80
 aaa ctg gct gat gtc tac cag gcg gag ctt cgg gag ctg cgg ctg cgg 288
 Lys Leu Ala Asp Val Tyr Gln Ala Glu Leu Arg Glu Leu Arg Leu Arg
 85 90 95
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 Leu Asp Gln Leu Thr Ala Asn Ser Ala Arg Leu Glu Val Glu Arg Asp
 100 105 110
 aac ttt gca cag gac ctc ggc acc ctg agg cag aag ctc caa gat gaa 384
 Asn Phe Ala Gln Asp Leu Gly Thr Leu Arg Gln Lys Leu Gln Asp Glu
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 Thr Asn Leu Arg Leu Glu Ala Glu Asn Asn Leu Ala Ala Tyr Arg Gln
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 gag gca cat gaa gcc acc ctg gct cgt gtg gat ttg gag aga aag gtt 480
 Glu Ala His Glu Ala Thr Leu Ala Arg Val Asp Leu Glu Arg Lys Val
 145 150 155 160

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 Glu Val Arg Asp Leu Arg Glu Gln Leu Ala Gln Gln Gln Val His Val
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 Glu Met Asp Val Ala Lys Pro Asp Leu Thr Ala Ala Leu Arg Glu Ile
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 Glu Trp Tyr Arg Ser Lys Phe Ala Asp Leu Thr Asp Ala Ala Ser Arg
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 Asn Ala Glu Leu Leu Arg Gln Ala Lys His Glu Ala Asn Asp Tyr Arg
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 Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Gln Glu Glu Arg His Ala
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 Gly Gln Ser Leu Lys Glu Glu Met Ala Arg His Leu Gln Glu Tyr Gln

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 Val Ser Glu Gly His Leu Lys Arg Asn Ile Val Val Lys Thr Val Glu
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<211> 403

<212> PRT

<213> Mus musculus

<400> 650

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Lys	Glu	Thr	Arg	Ala	Ser	Glu	Arg	Ala	Glu	Met	Met	Glu	Leu	Asn	Asp
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Arg	Phe	Ala	Ser	Tyr	Ile	Glu	Lys	Val	Arg	Phe	Leu	Glu	Gln	Gln	Asn
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Lys	Ala	Leu	Ala	Ala	Glu	Leu	Asn	Gln	Leu	Arg	Ala	Lys	Glu	Pro	Thr
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Lys	Leu	Ala	Asp	Val	Tyr	Gln	Ala	Glu	Leu	Arg	Glu	Leu	Arg	Leu	Arg
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Leu Asp Gln Leu Thr Ala Asn Ser Ala Arg Leu Glu Val Glu Arg Asp
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 Asn Phe Ala Gln Asp Leu Gly Thr Leu Arg Gln Lys Leu Gln Asp Glu
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 Glu Ala His Glu Ala Thr Leu Ala Arg Val Asp Leu Glu Arg Lys Val
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 Glu Ser Leu Glu Glu Glu Ile Gln Phe Leu Arg Lys Ile Tyr Glu Glu
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 Glu Val Arg Asp Leu Arg Glu Gln Leu Ala Gln Gln Gln Val His Val
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 Glu Met Asp Val Ala Lys Pro Asp Leu Thr Ala Ala Leu Arg Glu Ile
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 Arg Thr Gln Tyr Glu Ala Val Ala Thr Ser Asn Met Gln Glu Thr Glu
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 Glu Trp Tyr Arg Ser Lys Phe Ala Asp Leu Thr Asp Ala Ala Ser Arg
 225 230 235 240
 Asn Ala Glu Leu Leu Arg Gln Ala Lys His Glu Ala Asn Asp Tyr Arg
 245 250 255
 Arg Gln Leu Gln Ala Leu Thr Cys Asp Leu Glu Ser Leu Arg Gly Thr
 260 265 270
 Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Gln Glu Glu Arg His Ala
 275 280 285
 Arg Glu Ser Ala Ser Tyr Gln Glu Ala Leu Ala Arg Leu Glu Glu Glu
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 Gly Gln Ser Leu Lys Glu Glu Met Ala Arg His Leu Gln Glu Tyr Gln
 305 310 315 320
 Asp Leu Leu Asn Val Lys Leu Ala Leu Asp Ile Glu Ile Ala Thr Tyr

325 330 335
 Arg Lys Leu Leu Glu Gly Glu Glu Asn Arg Ile Thr Ile Pro Val Gln
 340 345 350
 Thr Phe Ser Asn Leu Gln Ile Arg Glu Thr Ser Leu Asp Thr Lys Ser
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<210> 651

<211> 2544

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (190).. (1668)

<400> 651

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 gcatagttac agcgcgtccg ttctccgtct cgcagccggc acagctagag cttcgagcgc 180
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 Met Asp Pro Ser Ser Lys Lys Val Thr Gly Arg Leu Met Leu

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 Ala Val Gly Gly Ala Val Leu Gly Ser Leu Gln Phe Gly Tyr Asn Thr

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Gly Val Ile Asn Ala Pro Gln Lys Val Ile Glu Glu Phe Tyr Asn Gln				
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aca tgg aac cac cgc atc gga gag ccc atc cca tcc acc aca ctc acc				375
Thr Trp Asn His Arg Ile Gly Glu Pro Ile Pro Ser Thr Thr Leu Thr				
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acg ctt tgg tct ctc tcc gtg gcc atc ttc tct gtc ggg ggc atg att				423
Thr Leu Trp Ser Leu Ser Val Ala Ile Phe Ser Val Gly Gly Met Ile				
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Gly Ser Phe Ser Val Gly Leu Phe Val Asn Arg Phe Gly Arg Arg Asn				
80	85	90		
tcc atg ctg atg atg aac ctg ttg gcc ttt gtg gct gct gtg ctt atg				519
Ser Met Leu Met Met Asn Leu Leu Ala Phe Val Ala Ala Val Leu Met				
95	100	105	110	
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Gly Phe Ser Lys Leu Gly Lys Ser Phe Glu Met Leu Ile Leu Gly Arg				
115	120	125		
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Phe Ile Ile Gly Val Tyr Cys Gly Leu Thr Thr Gly Phe Val Pro Met				
130	135	140		
tat gtg gga gag gtg tca cct aca gct cta cgt gga gcc cta ggc aca				663
Tyr Val Gly Glu Val Ser Pro Thr Ala Leu Arg Gly Ala Leu Gly Thr				
145	150	155		
ctg cac cag ctg gga atc gtc gtt ggc atc ctt att gcc cag gtg ttt				711
Leu His Gln Leu Gly Ile Val Val Gly Ile Leu Ile Ala Gln Val Phe				
160	165	170		
ggc tta gac tcc atc atg ggc aat gca gac ttg tgg cct ctg ctg ctc				759

Gly Leu Asp Ser Ile Met Gly Asn Ala Asp Leu Trp Pro Leu Leu Leu
 175 180 185 190
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 Ser Val Val Phe Val Pro Ala Leu Leu Gln Cys Ile Leu Leu Pro Phe
 195 200 205
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 Cys Pro Glu Ser Pro Arg Phe Leu Leu Ile Asn Arg Asn Glu Glu Asn
 210 215 220
 cgg gcc aag agt gtg ctg aag aag ctt cga ggg aca gcc gat gtg acc 903
 Arg Ala Lys Ser Val Leu Lys Lys Leu Arg Gly Thr Ala Asp Val Thr
 225 230 235
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 Arg Asp Leu Gln Glu Met Lys Glu Glu Gly Arg Gln Met Met Arg Glu
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 aag aag gtc acc atc ttg gag ctg ttc cgc tca ccc gcc tac cgc cag 999
 Lys Lys Val Thr Ile Leu Glu Leu Phe Arg Ser Pro Ala Tyr Arg Gln
 255 260 265 270
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 Pro Ile Leu Ile Ala Val Val Leu Gln Leu Ser Gln Gln Leu Ser Gly
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 Ile Asn Ala Val Phe Tyr Tyr Ser Thr Ser Ile Phe Glu Lys Ala Gly
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 gtg cag cag cct gtg tac gcc acc atc ggc tcc ggt atc gtc aac acg 1143
 Val Gln Gln Pro Val Tyr Ala Thr Ile Gly Ser Gly Ile Val Asn Thr
 305 310 315
 gcc ttc act gtg gtg tcg ctg ttt gtt gta gag cga gct gga cga cgg 1191
 Ala Phe Thr Val Val Ser Leu Phe Val Val Glu Arg Ala Gly Arg Arg
 320 325 330

acc ctg cac ctc att ggc ctg gct ggc atg gca ggc tgt gct gtg ctc 1239
 Thr Leu His Leu Ile Gly Leu Ala Gly Met Ala Gly Cys Ala Val Leu
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 Met Thr Ile Ala Leu Ala Leu Leu Glu Arg Leu Pro Trp Met Ser Tyr
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<211> 492

<212> PRT

<213> Mus musculus

<400> 652

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30

Ile Asn Ala Pro Gln Lys Val Ile Glu Glu Phe Tyr Asn Gln Thr Trp

35

40

45

Asn His Arg Ile Gly Glu Pro Ile Pro Ser Thr Thr Leu Thr Thr Leu
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 Lys Ser Val Leu Lys Lys Leu Arg Gly Thr Ala Asp Val Thr Arg Asp
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<211> 432

<212> DNA

<213> Mus musculus

<400> 653

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<210> 654

<211> 928

<212> DNA

<213> Mus musculus

<400> 654

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<211> 470

<212> DNA

<213> Mus musculus

<400> 655

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 gaagcgtctg tttacaaact ttcacaggca gcgtttctgt tggctcgata aatgggttga 180
 tctgactatg gatgacattc ggaggatgga agaagagacg aagagacagc tggatgagat 240
 gagacaaaag gaccagtgga aaggaatgac agcagacgac tagcgccacc gccctttctg 300
 cactttttgc aagacagtgg tcaacaggaa ggcccagcag ctccaccctc ctgagtggca 360
 ggcatcttcg gacgcagcct ttcgtgtgctc attcttcagg caactttcaa tcccttacta 420
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<220>

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<222> (5).. (2761)

<400> 656

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 gat gac caa gtc aaa aag att gat aag tat ctg tat gcc atg cgg ctc 97
 Asp Asp Gln Val Lys Lys Ile Asp Lys Tyr Leu Tyr Ala Met Arg Leu
 20 25 30
 tct gat gaa att ctg ata gat atc ctg aca cgc ttc aag aaa gag atg 145
 Ser Asp Glu Ile Leu Ile Asp Ile Leu Thr Arg Phe Lys Lys Glu Met
 35 40 45
 aag aat ggc ctc tcc cgg gat tat aac cca acg gcc tcc gtc aag atg 193
 Lys Asn Gly Leu Ser Arg Asp Tyr Asn Pro Thr Ala Ser Val Lys Met
 50 55 60
 ctg cca acc ttt gtc cgg tcc att ccg gac ggc tca gaa aag ggg gat 241
 Leu Pro Thr Phe Val Arg Ser Ile Pro Asp Gly Ser Glu Lys Gly Asp
 65 70 75
 ttc att gca ctg gat ctc ggc ggg tct tcc ttt cga atc ctg cgg gtg 289
 Phe Ile Ala Leu Asp Leu Gly Gly Ser Ser Phe Arg Ile Leu Arg Val
 80 85 90 95
 cag gtg aac cac gag aag agt cag aac gtc agc atg gag tct gag gtc 337
 Gln Val Asn His Glu Lys Ser Gln Asn Val Ser Met Glu Ser Glu Val
 100 105 110
 tac gac acc cca gag aac atc gtg cac ggc agt gga agc cag ctt ttt 385
 Tyr Asp Thr Pro Glu Asn Ile Val His Gly Ser Gly Ser Gln Leu Phe
 115 120 125
 gat cac gtc gct gaa tgc ctc gga gac ttc atg gag aaa agg aag atc 433

Asp His Val Ala Glu Cys Leu Gly Asp Phe Met Glu Lys Arg Lys Ile
 130 135 140
 aag gac aag aaa tta ccc gtg gga ttc acg ttt tcc ttc ccg tgc cga 481
 Lys Asp Lys Lys Leu Pro Val Gly Phe Thr Phe Ser Phe Pro Cys Arg
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 caa tcc aaa ata gac gag gcc gta ctg atc acg tgg aca aag cgg ttc 529
 Gln Ser Lys Ile Asp Glu Ala Val Leu Ile Thr Trp Thr Lys Arg Phe
 160 165 170 175
 aaa gcc agt ggc gtg gaa ggg gcg gat gtg gtc aag ctg ctg aat aaa 577
 Lys Ala Ser Gly Val Glu Gly Ala Asp Val Val Lys Leu Leu Asn Lys
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 gcc att aag aag cga ggg gac tat gac gct aac att gta gct gtg gtg 625
 Ala Ile Lys Lys Arg Gly Asp Tyr Asp Ala Asn Ile Val Ala Val Val
 195 200 205
 aat gac aca gtg ggg acc atg atg act tgc ggc tac gat gac caa cag 673
 Asn Asp Thr Val Gly Thr Met Met Thr Cys Gly Tyr Asp Asp Gln Gln
 210 215 220
 tgt gaa gtc ggc ctg atc att ggc act ggc acc aat gct tgc tac atg 721
 Cys Glu Val Gly Leu Ile Ile Gly Thr Gly Thr Asn Ala Cys Tyr Met
 225 230 235
 gag gaa ctg cga cac atc gac ctg gtg gaa ggc gat gag ggg agg atg 769
 Glu Glu Leu Arg His Ile Asp Leu Val Glu Gly Asp Glu Gly Arg Met
 240 245 250 255
 tgt att aac acg gaa tgg gga gcc ttt ggg gat gat ggg tcc ctg gaa 817
 Cys Ile Asn Thr Glu Trp Gly Ala Phe Gly Asp Asp Gly Ser Leu Glu
 260 265 270
 gac att cga aca gag ttt gac aga gag tta gac aga gga tcc ctc aac 865
 Asp Ile Arg Thr Glu Phe Asp Arg Glu Leu Asp Arg Gly Ser Leu Asn
 275 280 285

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Pro Gly Lys Gln Leu Phe Glu Lys Met Val Ser Gly Met Tyr Met Gly	
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Phe Glu Gly Arg Ile Thr Pro Glu Leu Leu Thr Arg Gly Lys Phe Thr	
320 325 330 335	
act agc gac gta gcc gcc att gaa acg gat aag gaa ggc gtt caa aat	1057
Thr Ser Asp Val Ala Ala Ile Glu Thr Asp Lys Glu Gly Val Gln Asn	
340 345 350	
gcc aag gaa atc ttg acc cgg ctg gga gtg gag ccg tct cac gat gac	1105
Ala Lys Glu Ile Leu Thr Arg Leu Gly Val Glu Pro Ser His Asp Asp	
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Cys Val Ser Val Gln His Val Cys Thr Ile Val Ser Phe Arg Ser Ala	
370 375 380	
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Asn Leu Val Ala Ala Thr Leu Gly Ala Ile Leu Asn Arg Leu Arg Asp	
385 390 395	
aat aag ggc acg ccc agg ctg cgg acc aca gtt ggc gta gac ggt tct	1249
Asn Lys Gly Thr Pro Arg Leu Arg Thr Thr Val Gly Val Asp Gly Ser	
400 405 410 415	
ctc tac aag atg cac cca cag tat tcc cgg cgg ttc cac aag acc ctg	1297
Leu Tyr Lys Met His Pro Gln Tyr Ser Arg Arg Phe His Lys Thr Leu	
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Arg Arg Leu Val Pro Asp Ser Asp Val Arg Phe Leu Leu Ser Glu Ser	

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Gly Ser Gly Lys Gly Ala Ala Met Val Thr Ala Val Ala Tyr Arg Leu			
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gcc gag cag cac cgg cag att gag gaa acc ctg tcc cac ttc cgc ctc	1441		
Ala Glu Gln His Arg Gln Ile Glu Glu Thr Leu Ser His Phe Arg Leu			
465	470	475	
agc aag cag gca ctg atg gag gtg aag aag aag ctg cgg tca gag atg	1489		
Ser Lys Gln Ala Leu Met Glu Val Lys Lys Lys Leu Arg Ser Glu Met			
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gaa atg ggg ctg aga aag gag acc aac agc aga gct acg gtc aaa atg	1537		
Glu Met Gly Leu Arg Lys Glu Thr Asn Ser Arg Ala Thr Val Lys Met			
500	505	510	
ctg cct tct tat gtt cgg agc atc cca gat ggg act gag cat ggt gac	1585		
Leu Pro Ser Tyr Val Arg Ser Ile Pro Asp Gly Thr Glu His Gly Asp			
515	520	525	
ttc ctg gcc ttg gat ctc gga gga acg aat ttc cga gtc cta ctg gta	1633		
Phe Leu Ala Leu Asp Leu Gly Gly Thr Asn Phe Arg Val Leu Leu Val			
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aag atc cgt agt ggg aaa aag aga aca gtg gag atg cac aac aag atc	1681		
Lys Ile Arg Ser Gly Lys Lys Arg Thr Val Glu Met His Asn Lys Ile			
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tac tcc att ccc ctg gaa atc atg cag ggc acc ggg gat gag ctg ttt	1729		
Tyr Ser Ile Pro Leu Glu Ile Met Gln Gly Thr Gly Asp Glu Leu Phe			
560	565	570	575
gat cac att gtc tcc tgc atc tcc gac ttc ctg gac tac atg ggg atc	1777		
Asp His Ile Val Ser Cys Ile Ser Asp Phe Leu Asp Tyr Met Gly Ile			
580	585	590	
aaa ggc ccc cgg atg cct ctg ggc ttc acc ttc tcg ttt ccc tgc aag	1825		

Lys Gly Pro Arg Met Pro Leu Gly Phe Thr Phe Ser Phe Pro Cys Lys
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 Gln Thr Ser Leu Asp Cys Gly Ile Leu Ile Thr Trp Thr Lys Gly Phe
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 Lys Ala Thr Asp Cys Val Gly His Asp Val Ala Thr Leu Leu Arg Asp
 625 630 635
 gct gta aaa agg aga gag gaa ttt gac ctg gat gtg gtg gct gtg gtc 1969
 Ala Val Lys Arg Arg Glu Glu Phe Asp Leu Asp Val Val Ala Val Val
 640 645 650 655
 aac gac acc gtg ggc acc atg atg act tgt gct tat gaa gaa cct tct 2017
 Asn Asp Thr Val Gly Thr Met Met Thr Cys Ala Tyr Glu Glu Pro Ser
 660 665 670
 tgt gag att gga ctc atc gtg ggg act ggc agc aat gcc tgc tac atg 2065
 Cys Glu Ile Gly Leu Ile Val Gly Thr Gly Ser Asn Ala Cys Tyr Met
 675 680 685
 gag gag atg aaa aac gtg gag atg gtg gag ggt aac cag ggc cag atg 2113
 Glu Glu Met Lys Asn Val Glu Met Val Glu Gly Asn Gln Gly Gln Met
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 Cys Ile Asn Met Glu Trp Gly Ala Phe Gly Asp Asn Gly Cys Leu Asp
 705 710 715
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 720 725 730 735
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 Glu Ile Val Arg Asn Ile Leu Ile Asp Phe Thr Lys Lys Gly Phe Leu
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 Phe Arg Gly Gln Ile Ser Glu Pro Leu Lys Thr Arg Gly Ile Phe Glu
 770 775 780
 acc aag ttt ctc tct cag atc gag agt gac cga tta gcg ctg ctc cag 2401
 Thr Lys Phe Leu Ser Gln Ile Glu Ser Asp Arg Leu Ala Leu Leu Gln
 785 790 795
 gtg cgg gcc atc ctt caa cag ctg ggt cta aac agc acg tgc agc gac 2449
 Val Arg Ala Ile Leu Gln Gln Leu Gly Leu Asn Ser Thr Cys Ser Asp
 800 805 810 815
 agt atc ctg gtc aag acc gtg tgt ggg gtg gtg tcc aag cgg gcg gcc 2497
 Ser Ile Leu Val Lys Thr Val Cys Gly Val Val Ser Lys Arg Ala Ala
 820 825 830
 cag ctg tgt ggt gcc ggc atg gcg gcc gtg gtg gaa aag atc cga gag 2545
 Gln Leu Cys Gly Ala Gly Met Ala Ala Val Val Glu Lys Ile Arg Glu
 835 840 845
 aac aga ggc cta gac cac ctg aat gta acc gtg ggc gtg gac ggg acg 2593
 Asn Arg Gly Leu Asp His Leu Asn Val Thr Val Gly Val Asp Gly Thr
 850 855 860
 ctc tac aaa ctt cat cca cac ttc tcc aga atc atg cac caa aca gtg 2641
 Leu Tyr Lys Leu His Pro His Phe Ser Arg Ile Met His Gln Thr Val
 865 870 875
 aag gaa ctg tca cca aag tgt acc gtg tcc ttc ctc ctg tct gaa gac 2689
 Lys Glu Leu Ser Pro Lys Cys Thr Val Ser Phe Leu Leu Ser Glu Asp
 880 885 890 895
 ggc agc ggc aag ggg gcc gcc ctt atc aca gct gtg ggc gtg cgg ctc 2737
 Gly Ser Gly Lys Gly Ala Ala Leu Ile Thr Ala Val Gly Val Arg Leu

900

905

910

aga gga gac cct acg aac gcc taa gagcaggatc ctcccagccc ccagcgcgcc 2791
 : Arg Gly Asp Pro Thr Asn Ala

915

acccttccag cactcctctc tagaaccgac gaccacacac cgccccgtg tgttccaccc 2851
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<211> 918

<212> PRT

<213> Mus musculus

<400> 657

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Asp Glu Ile Leu Ile Asp Ile Leu Thr Arg Phe Lys Lys Glu Met Lys

35 40 45

Asn Gly Leu Ser Arg Asp Tyr Asn Pro Thr Ala Ser Val Lys Met Leu

50 55 60

Pro Thr Phe Val Arg Ser Ile Pro Asp Gly Ser Glu Lys Gly Asp Phe

65 70 75 80

Ile Ala Leu Asp Leu Gly Gly Ser Ser Phe Arg Ile Leu Arg Val Gln

85 90 95

Val Asn His Glu Lys Ser Gln Asn Val Ser Met Glu Ser Glu Val Tyr

100 105 110

Asp Thr Pro Glu Asn Ile Val His Gly Ser Gly Ser Gln Leu Phe Asp

115 120 125

His Val Ala Glu Cys Leu Gly Asp Phe Met Glu Lys Arg Lys Ile Lys

130 135 140

Asp Lys Lys Leu Pro Val Gly Phe Thr Phe Ser Phe Pro Cys Arg Gln

145 150 155 160

Ser Lys Ile Asp Glu Ala Val Leu Ile Thr Trp Thr Lys Arg Phe Lys

165 170 175

Ala Ser Gly Val Glu Gly Ala Asp Val Val Lys Leu Leu Asn Lys Ala

180	185	190
Ile Lys Lys Arg Gly Asp Tyr Asp Ala Asn Ile Val Ala Val Val Asn		
195	200	205
Asp Thr Val Gly Thr Met Met Thr Cys Gly Tyr Asp Asp Gln Gln Cys		
210	215	220
Glu Val Gly Leu Ile Ile Gly Thr Gly Thr Asn Ala Cys Tyr Met Glu		
225	230	235
Glu Leu Arg His Ile Asp Leu Val Glu Gly Asp Glu Gly Arg Met Cys		
245	250	255
Ile Asn Thr Glu Trp Gly Ala Phe Gly Asp Asp Gly Ser Leu Glu Asp		
260	265	270
Ile Arg Thr Glu Phe Asp Arg Glu Leu Asp Arg Gly Ser Leu Asn Pro		
275	280	285
Gly Lys Gln Leu Phe Glu Lys Met Val Ser Gly Met Tyr Met Gly Glu		
290	295	300
Leu Val Arg Leu Ile Leu Val Lys Met Ala Lys Glu Ser Leu Leu Phe		
305	310	315
Glu Gly Arg Ile Thr Pro Glu Leu Leu Thr Arg Gly Lys Phe Thr Thr		
325	330	335
Ser Asp Val Ala Ala Ile Glu Thr Asp Lys Glu Gly Val Gln Asn Ala		
340	345	350
Lys Glu Ile Leu Thr Arg Leu Gly Val Glu Pro Ser His Asp Asp Cys		
355	360	365
Val Ser Val Gln His Val Cys Thr Ile Val Ser Phe Arg Ser Ala Asn		
370	375	380
Leu Val Ala Ala Thr Leu Gly Ala Ile Leu Asn Arg Leu Arg Asp Asn		
385	390	395
Lys Gly Thr Pro Arg Leu Arg Thr Thr Val Gly Val Asp Gly Ser Leu		
405	410	415

Tyr Lys Met His Pro Gln Tyr Ser Arg Arg Phe His Lys Thr Leu Arg
 420 425 430
 Arg Leu Val Pro Asp Ser Asp Val Arg Phe Leu Leu Ser Glu Ser Gly
 435 440 445
 Ser Gly Lys Gly Ala Ala Met Val Thr Ala Val Ala Tyr Arg Leu Ala
 450 455 460
 Glu Gln His Arg Gln Ile Glu Glu Thr Leu Ser His Phe Arg Leu Ser
 465 470 475 480
 Lys Gln Ala Leu Met Glu Val Lys Lys Lys Leu Arg Ser Glu Met Glu
 485 490 495
 Met Gly Leu Arg Lys Glu Thr Asn Ser Arg Ala Thr Val Lys Met Leu
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 Pro Ser Tyr Val Arg Ser Ile Pro Asp Gly Thr Glu His Gly Asp Phe
 515 520 525
 Leu Ala Leu Asp Leu Gly Gly Thr Asn Phe Arg Val Leu Leu Val Lys
 530 535 540
 Ile Arg Ser Gly Lys Lys Arg Thr Val Glu Met His Asn Lys Ile Tyr
 545 550 555 560
 Ser Ile Pro Leu Glu Ile Met Gln Gly Thr Gly Asp Glu Leu Phe Asp
 565 570 575
 His Ile Val Ser Cys Ile Ser Asp Phe Leu Asp Tyr Met Gly Ile Lys
 580 585 590
 Gly Pro Arg Met Pro Leu Gly Phe Thr Phe Ser Phe Pro Cys Lys Gln
 595 600 605
 Thr Ser Leu Asp Cys Gly Ile Leu Ile Thr Trp Thr Lys Gly Phe Lys
 610 615 620
 Ala Thr Asp Cys Val Gly His Asp Val Ala Thr Leu Leu Arg Asp Ala
 625 630 635 640
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645	650	655
Asp Thr Val Gly Thr Met Met Thr Cys Ala Tyr Glu Glu Pro Ser Cys		
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Glu Ile Gly Leu Ile Val Gly Thr Gly Ser Asn Ala Cys Tyr Met Glu		
675	680	685
Glu Met Lys Asn Val Glu Met Val Glu Gly Asn Gln Gly Gln Met Cys		
690	695	700
Ile Asn Met Glu Trp Gly Ala Phe Gly Asp Asn Gly Cys Leu Asp Asp		
705	710	715
Ile Arg Thr Asp Phe Asp Lys Val Val Asp Glu Tyr Ser Leu Asn Ser		720
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Gly Lys Gln Arg Phe Glu Lys Met Ile Ser Gly Met Tyr Leu Gly Glu		
740	745	750
Ile Val Arg Asn Ile Leu Ile Asp Phe Thr Lys Lys Gly Phe Leu Phe		
755	760	765
Arg Gly Gln Ile Ser Glu Pro Leu Lys Thr Arg Gly Ile Phe Glu Thr		
770	775	780
Lys Phe Leu Ser Gln Ile Glu Ser Asp Arg Leu Ala Leu Leu Gln Val		
785	790	795
Arg Ala Ile Leu Gln Gln Leu Gly Leu Asn Ser Thr Cys Ser Asp Ser		800
805	810	815
Ile Leu Val Lys Thr Val Cys Gly Val Val Ser Lys Arg Ala Ala Gln		
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Leu Cys Gly Ala Gly Met Ala Ala Val Val Glu Lys Ile Arg Glu Asn		
835	840	845
Arg Gly Leu Asp His Leu Asn Val Thr Val Gly Val Asp Gly Thr Leu		
850	855	860
Tyr Lys Leu His Pro His Phe Ser Arg Ile Met His Gln Thr Val Lys		
865	870	875
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Glu Leu Ser Pro Lys Cys Thr Val Ser Phe Leu Leu Ser Glu Asp Gly

885

890

895

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900

905

910

Gly Asp Pro Thr Asn Ala

915

<210> 658

<211> 959

<212> DNA

<213> Mus musculus

<400> 658

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<211> 474

<212> DNA

<213> *Mus musculus*

<400> 659

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taaggttccc aacgcctgct tgttcacat caacaaagaa gaccacactc tggggaacat 180
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tagtggctgg aaggctggca catactctc agggcccttc agtttaccac atgg 474

<210> 660

<211> 927

<212> DNA

<213> *Mus musculus*

<400> 660

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<210> 661

<211> 510

<212> DNA

<213> Mus musculus

<400> 661

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 atacggatgg gccaaatggc tatgggaggt gctatgggca taaacaatag aggcgcgatg 300
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 gatggaacct ttggattgac cccaccaaca actgaacgtt ttggccaagc tgcaacaatg 420
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<210> 662

<211> 319

<212> DNA

<213> *Mus musculus*

<400> 662

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acctcaggca tgtattctgg caatcgggtgc ttcataggat aaactgatcc cagcagataa 180
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<210> 663

<211> 363

<212> DNA

<213> *Mus musculus*

<400> 663

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actaggcaca tcccaggcgg actgcgcagt gctgatcgta gcagccgttg tgggcgagtt 180
tcaggcgggc atctccaaga cggggcaaac ccgagaacac gcactcctgg cctacactct 240
gggtgtgaag ccagctcatt gtgggtgtga acaagatgga ctccactgaa ccagcctaca 300
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caa 363
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<210> 664

<211> 2207

<212> DNA

<213> *Mus musculus*

<400> 664

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tttttttttt ttttaactaca gttgtaatcc agtcttctgg tggattaagc aaagatgata 180
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ttctttgaag ctcatttttc ttgggttgggt agtgattcag ttctttaaac atatgaataa 720
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gaattgagat catatgcaga tgcttggttg ccaagagcac tactataaag aatgacctct 1680
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 caatgtctgg catctgtatt ctgatgatt gticcttttt catccactct ggatttttta 1920
 aataaaattc tgaagcctc ttgatctcct ttgtgaatgg tgatagctca aggattatga 1980
 ctgctatcag tttttagagg agaaaaatca ctggctaaaa ggttgaacaa atgaaacatg 2040
 gggagtgact aataaaatgc tggcatatat gctggatgtg aaagtcact caggaagcag 2100
 tttgaagcca ggcagggtg tacagttaga ctccgtctta ataaaagtac tggcataaac 2160
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<210> 665

<211> 1015

<212> DNA

<213> Mus musculus

<400> 665

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 tttataacta aaaccagttc actagagacc taggaatggg ctgggctgaa agtgaaatat 360
 ttctccctg gatttttacc agccatcacc ttggaccacc aagccttgaa tgggtgtgcc 420
 agttggctcc tcctggggag gactttgtc actcttcagc caagaagcag ctctgtgcac 480
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 tcctcgcttg cctctgagac atcagctgga agcttgtaag ctacgggctg gctgagtgga 600
 aactcggatg gtggagaatt cgagcaaagc cttttgttgg ggaaaccggc gggatatgat 660
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agaaaaataa attctggggc gaggggtgct ctttagggag gttttttgtg tgaattitgt 780
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 tgggtgtgtg agggcgtggt gcgttgggaa atacagtigt ttcgttgctt ttatttgtgt 900
 tttgttactt gtgttgacg cgggtgtgct cgtttagcgc gcggatatgc gtaggtgttg 960
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<210> 666

<211> 433

<212> DNA

<213> Mus musculus

<400> 666

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 gtctccttg tagaagttag gggatgaaca catctctggt attgaagaag tgaacatggt 180
 taccgaccaa ggaacagtga tccatgataa caaccctaaa gtacaggcat ccttggcagc 240
 ggacaccttc accattacag gccatgctga gacaaagcag ctgacacaaa tgcttcccag 300
 cattctcaac gagcttgggt cagacagcct gactagtita aggagactgg ctgacgctct 360
 cccgaaaaat ctgtggatga aaacgcgcct tgctactgag acgatgatgt aatggatcca 420
 gatctgcgga aat 433

<210> 667

<211> 472

<212> DNA

<213> Mus musculus

<400> 667

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ggctgcatgc atgctccgct accagaagtg tctggatgct cgctcccaga cctccacctc 180
 ctgcctccca gcacccccctg cggagtcagt tgcaagacgt gtagggtgga cagtcgcgag 240
 ggggtgttcag tgcctgtggg gtccctcaa gcccaaacgt ctgggatccc agacccaatg 300
 aagaatccc atccttcctc tgcctgcttg tttggggccc cagggaactc aagggtttgg 360
 ggcaggtagg ggctgtggat gtcttccta caccacagct cccctgggct gcccttcctc 420
 agtagctggg gtccctacc taggggctgg gagagagaaa ttgaattcct tc 472

<210> 668

<211> 426

<212> DNA

<213> Mus musculus

<400> 668

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 aaagcgctac tgcctccgcc gcatgctgt agcacacgtg gacctgattg agaagctgct 180
 gaactatgca cccctagaga agtgaccgct ggagcctgca ctctctgtc tctgtctggc 240
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 ggctgtggcc ctgtggctaa gtccgtttac cctggataga actgtttagt aaagatgttt 360
 gcagaaccac caacaggctt aacttccatg aaatcctccc taaatgcaaa ccttgggtgtg 420
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<210> 669

<211> 1596

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (43).. (1068)

<400> 669

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ttg tat ggc gag gag gcg ctg agc ggc ctg gct gcg ggt gcg tcg agc      102
Leu Tyr Gly Glu Glu Ala Leu Ser Gly Leu Ala Ala Gly Ala Ser Ser
      5              10              15              20
gtc gct ggt gct act ggg gcc ccc ggc ggt ggt ggc ttc gcg ccc ccg      150
Val Ala Gly Ala Thr Gly Ala Pro Gly Gly Gly Gly Phe Ala Pro Pro
              25              30              35
ggc cgc gct ttc ccc ggg gcg ccc ccg acg agc agc atg ctg aag aaa      198
Gly Arg Ala Phe Pro Gly Ala Pro Pro Thr Ser Ser Met Leu Lys Lys
              40              45              50
gac gcg ctg acg ctc agc ctg gcg gac gag gga gcg gcg gga ttg aaa      246
Asp Ala Leu Thr Leu Ser Leu Ala Asp Glu Gly Ala Ala Gly Leu Lys
              55              60              65
cca ggg tcg gcc act gca cct tct gcg ctg cgc ccc gac ggc gcc ccc      294
Pro Gly Ser Ala Thr Ala Pro Ser Ala Leu Arg Pro Asp Gly Ala Pro
              70              75              80
gac ggg ctg ctg gct tcg ccg gat ctt ggg ctg ctc aaa ctc gcg tcg      342
Asp Gly Leu Leu Ala Ser Pro Asp Leu Gly Leu Leu Lys Leu Ala Ser
              85              90              95              100
ccg gag ctg gag agg ctg atc atc cag tcc aac ggg ctg gtg acc act      390
Pro Glu Leu Glu Arg Leu Ile Ile Gln Ser Asn Gly Leu Val Thr Thr
              105              110              115
acc ccg acc agt acg cag ttc ctc tac ccg aag gtg gca gcc agc gag      438
Thr Pro Thr Ser Thr Gln Phe Leu Tyr Pro Lys Val Ala Ala Ser Glu

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120	125	130	
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Glu Gln Glu Phe Ala Glu Gly Phe Val Lys Ala Leu Glu Asp Leu His			
135	140	145	
aag caa agc cag ctg ggt gcg gcc acc gcg gcc acc tca ggg gct ccc			534
Lys Gln Ser Gln Leu Gly Ala Ala Thr Ala Ala Thr Ser Gly Ala Pro			
150	155	160	
gcg cct ccc gcg ccc gcc gac ctg gcc gcc acc ccc ggg gcc acg gag			582
Ala Pro Pro Ala Pro Ala Asp Leu Ala Ala Thr Pro Gly Ala Thr Glu			
165	170	175	180
acc ccg gtc tac gcc aac ctg agc agt ttc gcg ggt ggc gcc ggg ccc			630
Thr Pro Val Tyr Ala Asn Leu Ser Ser Phe Ala Gly Gly Ala Gly Pro			
185	190	195	
cct ggg ggc gcg gcc acc gtg gct ttc gcc gcg gag cca gtg ccc ttc			678
Pro Gly Gly Ala Ala Thr Val Ala Phe Ala Ala Glu Pro Val Pro Phe			
200	205	210	
ccg ccg ccc ccg ggc gcg ctg ggg ccg ccg cca cct ccg cat cca ccg			726
Pro Pro Pro Pro Gly Ala Leu Gly Pro Pro Pro Pro Pro His Pro Pro			
215	220	225	
cgc ctg gcc gcg ctc aag gac gag ccg cag acc gtg ccg gac gtg ccg			774
Arg Leu Ala Ala Leu Lys Asp Glu Pro Gln Thr Val Pro Asp Val Pro			
230	235	240	
agc ttc ggc gac agc cct ccg ctg tcg ccc atc gac atg gac acg caa			822
Ser Phe Gly Asp Ser Pro Pro Leu Ser Pro Ile Asp Met Asp Thr Gln			
245	250	255	260
gaa cgc atc aag gcg gag cgc aag agg ctg cgc aac cgc atc gcc gcc			870
Glu Arg Ile Lys Ala Glu Arg Lys Arg Leu Arg Asn Arg Ile Ala Ala			
265	270	275	
tcc aaa tgc cgc aag cgc aag ctg gag cgt atc tcg cgc ctg gag gag			918

Ser Lys Cys Arg Lys Arg Lys Leu Glu Arg Ile Ser Arg Leu Glu Glu
 280 285 290
 aaa gtc aag acc ctc aaa agc cag aac acc gag ctg gcg tcc acc gcc 966
 Lys Val Lys Thr Leu Lys Ser Gln Asn Thr Glu Leu Ala Ser Thr Ala
 295 300 305
 agc ctg ctg cgc gag cag gtg gcg cac gtc aaa cag aaa gtc ctc agc 1014
 Ser Leu Leu Arg Glu Gln Val Ala His Val Lys Gln Lys Val Leu Ser
 310 315 320
 cac gtc aac agc ggc tgc cag ctg ctg ccc cag cac cag gtc ccg gcg 1062
 His Val Asn Ser Gly Cys Gln Leu Leu Pro Gln His Gln Val Pro Ala
 325 330 335 340
 tac tga gcccagagcnc ggggcgcattg cgcggactag ctgcggtggg ggggcgcccc 1118
 Tyr
 ggactctttc gagactcggg gccccggac tcgacaagcc ggacccccct taactctgga 1178
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<210> 670

<211> 341

<212> PRT

<213> Mus musculus

<400> 670

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Phe Ala Pro Pro Gly Arg Ala Phe Pro Gly Ala Pro Pro Thr Ser Ser			
35	40	45	
Met Leu Lys Lys Asp Ala Leu Thr Leu Ser Leu Ala Asp Glu Gly Ala			
50	55	60	
Ala Gly Leu Lys Pro Gly Ser Ala Thr Ala Pro Ser Ala Leu Arg Pro			
65	70	75	80
Asp Gly Ala Pro Asp Gly Leu Leu Ala Ser Pro Asp Leu Gly Leu Leu			
85	90	95	
Lys Leu Ala Ser Pro Glu Leu Glu Arg Leu Ile Ile Gln Ser Asn Gly			
100	105	110	
Leu Val Thr Thr Thr Pro Thr Ser Thr Gln Phe Leu Tyr Pro Lys Val			
115	120	125	
Ala Ala Ser Glu Glu Gln Glu Phe Ala Glu Gly Phe Val Lys Ala Leu			
130	135	140	
Glu Asp Leu His Lys Gln Ser Gln Leu Gly Ala Ala Thr Ala Ala Thr			
145	150	155	160
Ser Gly Ala Pro Ala Pro Pro Ala Pro Ala Asp Leu Ala Ala Thr Pro			
165	170	175	
Gly Ala Thr Glu Thr Pro Val Tyr Ala Asn Leu Ser Ser Phe Ala Gly			
180	185	190	
Gly Ala Gly Pro Pro Gly Gly Ala Ala Thr Val Ala Phe Ala Ala Glu			
195	200	205	
Pro Val Pro Phe Pro Pro Pro Pro Gly Ala Leu Gly Pro Pro Pro Pro			
210	215	220	
Pro His Pro Pro Arg Leu Ala Ala Leu Lys Asp Glu Pro Gln Thr Val			
225	230	235	240

Pro Asp Val Pro Ser Phe Gly Asp Ser Pro Pro Leu Ser Pro Ile Asp
 245 250 255
 Met Asp Thr Gln Glu Arg Ile Lys Ala Glu Arg Lys Arg Leu Arg Asn
 260 265 270
 Arg Ile Ala Ala Ser Lys Cys Arg Lys Arg Lys Leu Glu Arg Ile Ser
 275 280 285
 Arg Leu Glu Glu Lys Val Lys Thr Leu Lys Ser Gln Asn Thr Glu Leu
 290 295 300
 Ala Ser Thr Ala Ser Leu Leu Arg Glu Gln Val Ala His Val Lys Gln
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<210> 671

<211> 2862

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (393).. (1655)

<400> 671

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 ccaatggiga actgggaggc ccctttgacc ag atg aac gga gtg gcg gga gat 413
 Met Asn Gly Val Ala Gly Asp
 1 5
 ggc atg atc aac att gac atg act gga gag aag aga ccc ctg gat ctc 461
 Gly Met Ile Asn Ile Asp Met Thr Gly Glu Lys Arg Pro Leu Asp Leu
 10 15 20
 ccg tat ccg agt agc ttc gct ccc atc tct gca cct aga aac cag acc 509
 Pro Tyr Pro Ser Ser Phe Ala Pro Ile Ser Ala Pro Arg Asn Gln Thr
 25 30 35
 ttc acc tac atg ggc aaa ttc tcc att gac cca cag tac cct ggt gcc 557
 Phe Thr Tyr Met Gly Lys Phe Ser Ile Asp Pro Gln Tyr Pro Gly Ala
 40 45 50 55
 agc tgc tat cca gaa ggt atc atc aat att gtg agt gcg ggc atc ttg 605
 Ser Cys Tyr Pro Glu Gly Ile Ile Asn Ile Val Ser Ala Gly Ile Leu
 60 65 70
 caa ggg gtc acc cct cca gct tca acc aca gcc tcc tcc agc gtc acc 653
 Gln Gly Val Thr Pro Pro Ala Ser Thr Thr Ala Ser Ser Ser Val Thr
 75 80 85
 tcc gcc tcc ccc aac cca ctg gcc acg gga ccc ctg ggt gtg tgt acc 701
 Ser Ala Ser Pro Asn Pro Leu Ala Thr Gly Pro Leu Gly Val Cys Thr
 90 95 100
 atg tcc cag act cag cct gaa ctg gac cac ctc tac tct ccg cca cca 749
 Met Ser Gln Thr Gln Pro Glu Leu Asp His Leu Tyr Ser Pro Pro Pro
 105 110 115
 cct cct cct cct tat tcg ggc tgt aca gga gat ctc tac cag gat cct 797
 Pro Pro Pro Pro Tyr Ser Gly Cys Thr Gly Asp Leu Tyr Gln Asp Pro
 120 125 130 135

tca gca ttc tta tgc ccg cca tcc acc act tcc acc tcc tct ctg gcc 845
 Ser Ala Phe Leu Ser Pro Pro Ser Thr Thr Ser Thr Ser Ser Leu Ala
 140 145 150
 tac cag cca cct cct tcc tac cca tcc ccc aag cca gct atg gac cca 893
 Tyr Gln Pro Pro Pro Ser Tyr Pro Ser Pro Lys Pro Ala Met Asp Pro
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 ggt ctc att cct atg atc cca gac tat cct gga ttt ttt cca tct ccg 941
 Gly Leu Ile Pro Met Ile Pro Asp Tyr Pro Gly Phe Phe Pro Ser Pro
 170 175 180
 tgc cag aga gat cca cac ggt gct gct ggc cca gat cga aag ccg ttt 989
 Cys Gln Arg Asp Pro His Gly Ala Ala Gly Pro Asp Arg Lys Pro Phe
 185 190 195
 ccc tgt cct ctg gac tcc ctg cga gtg ccc cct cca ctc acg cca ctc 1037
 Pro Cys Pro Leu Asp Ser Leu Arg Val Pro Pro Pro Leu Thr Pro Leu
 200 205 210 215
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 Ser Thr Ile Arg Asn Phe Thr Leu Gly Gly Pro Gly Ala Gly Val Thr
 220 225 230
 gga cca gga gca agt gga ggt ggt gag gga cct cgg ctg cct ggc agt 1133
 Gly Pro Gly Ala Ser Gly Gly Gly Glu Gly Pro Arg Leu Pro Gly Ser
 235 240 245
 ggg tct gca gca gtg act gcc acc cct tat aat ccg cac cac ctg cca 1181
 Gly Ser Ala Ala Val Thr Ala Thr Pro Tyr Asn Pro His His Leu Pro
 250 255 260
 ttg cgg ccc atc ctg cga cct cga aag tac cct aac agg ccc agc aaa 1229
 Leu Arg Pro Ile Leu Arg Pro Arg Lys Tyr Pro Asn Arg Pro Ser Lys
 265 270 275
 acg cca gtg cac gaa agg ccc tat ccc tgc cca gca gaa ggt tgt gat 1277
 Thr Pro Val His Glu Arg Pro Tyr Pro Cys Pro Ala Glu Gly Cys Asp

280	285	290	295	
agg agg ttc tca cgc tct gat gag ctg acc agg cac atc cga atc cac				1325
Arg Arg Phe Ser Arg Ser Asp Glu Leu Thr Arg His Ile Arg Ile His				
	300	305	310	
acg ggc cac aag ccc ttc cag tgt cgg atc tgc atg cga aac ttc agc				1373
Thr Gly His Lys Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser				
	315	320	325	
cga agt gac cac ctt act act cac atc cga acc cac acc ggg gag aag				1421
Arg Ser Asp His Leu Thr Thr His Ile Arg Thr His Thr Gly Glu Lys				
	330	335	340	
ccc ttt gcc tgt gac tat tgt ggc cgc aag ttt gcc agg agt gac gaa				1469
Pro Phe Ala Cys Asp Tyr Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu				
	345	350	355	
agg aag cgc cac acc aag atc cac ctt cgg cag aag gaa cgg aag agc				1517
Arg Lys Arg His Thr Lys Ile His Leu Arg Gln Lys Glu Arg Lys Ser				
	360	365	370	375
agt gct ccc tct gca cct cca tct gcc cag tct tca gcc tct ggt cct				1565
Ser Ala Pro Ser Ala Pro Pro Ser Ala Gln Ser Ser Ala Ser Gly Pro				
	380	385	390	
ggg ggc tcg cag gcc ggg ggc agc ctg tgc ggt aac agc gcc att gga				1613
Gly Gly Ser Gln Ala Gly Gly Ser Leu Cys Gly Asn Ser Ala Ile Gly				
	395	400	405	
gga cca ctg gcc tcc tgc acc tct cga acc agg aca ccg tga				1655
Gly Pro Leu Ala Ser Cys Thr Ser Arg Thr Arg Thr Pro				
	410	415	420	
gatgaagctc tggctgacac accagtttct ccaggcccca gaggccctct gtccgagctg				1715
ccaacactac cacccttccc tgttccctccc catgatcccg tgatctgggc aaaggacctt				1775
gatggagccc agctctgtcc cacccttctca cggacggcct tccgaaaact taggccattt				1835
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<211> 420

<212> PRT

<213> Mus musculus

<400> 672

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 Gly Pro Leu Gly Val Cys Thr Met Ser Gln Thr Gln Pro Glu Leu Asp
 100 105 110
 His Leu Tyr Ser Pro Pro Pro Pro Pro Pro Tyr Ser Gly Cys Thr
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 Pro Lys Pro Ala Met Asp Pro Gly Leu Ile Pro Met Ile Pro Asp Tyr
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 Gly Pro Asp Arg Lys Pro Phe Pro Cys Pro Leu Asp Ser Leu Arg Val
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 225 230 235 240
 Gly Pro Arg Leu Pro Gly Ser Gly Ser Ala Ala Val Thr Ala Thr Pro
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 Tyr Asn Pro His His Leu Pro Leu Arg Pro Ile Leu Arg Pro Arg Lys
 260 265 270

Tyr Pro Asn Arg Pro Ser Lys Thr Pro Val His Glu Arg Pro Tyr Pro
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 Thr Arg His Ile Arg Ile His Thr Gly His Lys Pro Phe Gln Cys Arg
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 Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Tyr Cys Gly Arg
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 Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys Ile His Leu
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 370 375 380
 Gln Ser Ser Ala Ser Gly Pro Gly Gly Ser Gln Ala Gly Gly Ser Leu
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<211> 1086

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (80).. (967)

<400> 673

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gag gag gat gtc ctc aaa ctc ctt gct gcg gga acc cac tta ggt ggc 160
Glu Glu Asp Val Leu Lys Leu Leu Ala Ala Gly Thr His Leu Gly Gly
              15              20              25
acc aac ctt gac ttt cag atg gag cag tac atc tac aaa agg aaa agt 208
Thr Asn Leu Asp Phe Gln Met Glu Gln Tyr Ile Tyr Lys Arg Lys Ser
              30              35              40
gac ggt atc tac atc ata aac ctg aag agg acc tgg gag aag ctg ttg 256
Asp Gly Ile Tyr Ile Ile Asn Leu Lys Arg Thr Trp Glu Lys Leu Leu
              45              50              55
ctc gca gct cga gct att gtt gcc atc gag aat cct gct gac gtc agc 304
Leu Ala Ala Arg Ala Ile Val Ala Ile Glu Asn Pro Ala Asp Val Ser
              60              65              70              75
gtc atc tcc tcc agg aac act ggc cag cga gct gtg ctg aag ttt gct 352
Val Ile Ser Ser Arg Asn Thr Gly Gln Arg Ala Val Leu Lys Phe Ala
              80              85              90
gct gcc aca gga gcc act ccg atc gct ggc cgc ttc aca cct ggg acc 400
Ala Ala Thr Gly Ala Thr Pro Ile Ala Gly Arg Phe Thr Pro Gly Thr
              95              100              105
ttc act aac cag atc caa gca gcc ttc agg gag cca cgg ctt cta gtg 448
Phe Thr Asn Gln Ile Gln Ala Ala Phe Arg Glu Pro Arg Leu Leu Val
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Val Thr Asp Pro Arg Ala Asp His Gln Pro Leu Thr Glu Ala Ser Tyr

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125	130	135	
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tat gtg gac att gcc atc cca tgc aac aac aag gga gct cac tca gtg	592		
Tyr Val Asp Ile Ala Ile Pro Cys Asn Asn Lys Gly Ala His Ser Val			
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ggc ctg atg tgg tgg atg ctg gcc agg gaa gta ctc cgc atg cga ggt	640		
Gly Leu Met Trp Trp Met Leu Ala Arg Glu Val Leu Arg Met Arg Gly			
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act atc tcc cgt gag cac ccc tgg gag gtc atg cct gat ctt tac ttc	688		
Thr Ile Ser Arg Glu His Pro Trp Glu Val Met Pro Asp Leu Tyr Phe			
190	195	200	
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Tyr Arg Asp Pro Glu Glu Ile Glu Lys Glu Glu Gln Ala Ala Ala Glu			
205	210	215	
aag gct gtg acc aag gag gaa ttc cag ggt gaa tgg acc gca cca gct	784		
Lys Ala Val Thr Lys Glu Glu Phe Gln Gly Glu Trp Thr Ala Pro Ala			
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cct gag ttc act gct gct cag cct gag gtg gcc gac tgg tct gag ggt	832		
Pro Glu Phe Thr Ala Ala Gln Pro Glu Val Ala Asp Trp Ser Glu Gly			
240	245	250	
gtg cag gtt ccc tct gtg ccc atc cag cag ttc ccc acg gaa gac tgg	880		
Val Gln Val Pro Ser Val Pro Ile Gln Gln Phe Pro Thr Glu Asp Trp			
255	260	265	
agt gca cag cca gcc act gag gat tgg tca gca gct ccc aca gcg cag	928		
Ser Ala Gln Pro Ala Thr Glu Asp Trp Ser Ala Ala Pro Thr Ala Gln			
270	275	280	
gcc act gag tgg gtt gga gcc acc act gag tgg tcc tga tctgtgtgc	977		

Ala Thr Glu Trp Val Gly Ala Thr Thr Glu Trp Ser

285

290

295

aggtgcctga gcaaaggga aaaagatgga aggaaaataa agttgctaaa agctgtctta 1037

tggctctcac tgcagactgt acctggattg gcatttggct atacaacag 1086

<210> 674

<211> 295

<212> PRT

<213> Mus musculus

<400> 674

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20

25

30

Gln Met Glu Gln Tyr Ile Tyr Lys Arg Lys Ser Asp Gly Ile Tyr Ile

35

40

45

Ile Asn Leu Lys Arg Thr Trp Glu Lys Leu Leu Leu Ala Ala Arg Ala

50

55

60

Ile Val Ala Ile Glu Asn Pro Ala Asp Val Ser Val Ile Ser Ser Arg

65

70

75

80

Asn Thr Gly Gln Arg Ala Val Leu Lys Phe Ala Ala Ala Thr Gly Ala

85

90

95

Thr Pro Ile Ala Gly Arg Phe Thr Pro Gly Thr Phe Thr Asn Gln Ile

100

105

110

Gln Ala Ala Phe Arg Glu Pro Arg Leu Leu Val Val Thr Asp Pro Arg

115

120

125

Ala Asp His Gln Pro Leu Thr Glu Ala Ser Tyr Val Asn Leu Pro Thr

130

135

140

Ile Ala Leu Cys Asn Thr Asp Ser Pro Leu Ala Tyr Val Asp Ile Ala
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 180 185 190
 His Pro Trp Glu Val Met Pro Asp Leu Tyr Phe Tyr Arg Asp Pro Glu
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 Glu Ile Glu Lys Glu Glu Gln Ala Ala Ala Glu Lys Ala Val Thr Lys
 210 215 220
 Glu Glu Phe Gln Gly Glu Trp Thr Ala Pro Ala Pro Glu Phe Thr Ala
 225 230 235 240
 Ala Gln Pro Glu Val Ala Asp Trp Ser Glu Gly Val Gln Val Pro Ser
 245 250 255
 Val Pro Ile Gln Gln Phe Pro Thr Glu Asp Trp Ser Ala Gln Pro Ala
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<210> 675

<211> 704

<212> DNA

<213> Mus musculus

<400> 675

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<210> 676

<211> 513

<212> DNA

<213> Mus musculus

<400> 676

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<210> 677

<211> 568

<212> DNA

<213> Mus musculus

<400> 677

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 tctggcagta tggcaaccag tgaggaagag cggagctctc gggaatgca gctctatgtg 180
 cagaagcaca atatccaggc cctgctgaag gactccatcg tgcagctgtg cactacgcgg 240
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<210> 678

<211> 2125

<212> DNA

<213> Mus musculus

<400> 678

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 ggccctccag ccactgtctt tgcagttgc ttggtatgac agccttattg actctttggc 360
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<211> 5881

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (214).. (5700)

<400> 679

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 cagaacatac caccagccgt ttgagaatac aacatagcaa acttcactac tttacaactt 180
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Met Ala Asp Glu Arg Lys Asp

1

5

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 Glu Gly Lys Ala Pro His Trp Thr Ser Ala Ser Leu Thr Glu Ala Ala

10

15

20

gca cac cct cac tct cca gag atg aag gac cag ggt ggg gca ggg gaa 330
 Ala His Pro His Ser Pro Glu Met Lys Asp Gln Gly Gly Ala Gly Glu

25

30

35

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 Gly Leu Ser Arg Asn Ala Asn Gly Phe Pro Tyr Arg Glu Glu Glu Glu

40

45

50

55

ggc gcc ttt ggg gag cac agg tca cag ggc acc tat tca gat acc aaa 426
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60

65

70

gag aac ggg atc aac gga gag ctg acc tca gct gac aga gaa aca gca 474

Glu Asn Gly Ile Asn Gly Glu Leu Thr Ser Ala Asp Arg Glu Thr Ala
 75 80 85
 gag gag gta tct gca agg ata gtt caa gta gtc aca gct gaa gct gta 522
 Glu Glu Val Ser Ala Arg Ile Val Gln Val Val Thr Ala Glu Ala Val
 90 95 100
 gca gtc ctg aaa gga gaa caa gag aag gaa gcc caa tac aag gac cag 570
 Ala Val Leu Lys Gly Glu Gln Glu Lys Glu Ala Gln Tyr Lys Asp Gln
 105 110 115
 cct gca gct ctg cct cta gca gcc gaa gaa aca gct aat ctg cca cct 618
 Pro Ala Ala Leu Pro Leu Ala Ala Glu Glu Thr Ala Asn Leu Pro Pro
 120 125 130 135
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 Ser Pro Pro Pro Ser Pro Ala Ser Glu Gln Thr Ala Thr Val Glu Glu
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 220 225 230

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 235 240 245
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 Ile Gly Leu Ser Ala Glu Pro Pro Ala Pro Lys Glu Pro Lys Asp Trp
 250 255 260
 ttc att gaa atg ccc acg gaa tca aag aag gat gaa tgg ggt tta gct 1050
 Phe Ile Glu Met Pro Thr Glu Ser Lys Lys Asp Glu Trp Gly Leu Ala
 265 270 275
 gcc cca ata tct cct ggc ccc ttg aca ccc atg agg gaa aaa gat gtg 1098
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 Leu Glu Asp Ile Pro Arg Trp Glu Gly Lys Gln Phe Asp Ser Pro Met
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 Pro Ser Pro Phe His Gly Gly Ser Phe Thr Leu Pro Leu Asp Thr Met
 315 320 325
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 330 335 340
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 Phe Gln Ser Asp Asp Lys Val Ser Leu Gln Asp Pro Ser Ala Leu Ala
 345 350 355
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380	385	390	
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Gly Glu Val Lys Val Thr Thr Asp Gln Glu Lys Lys Glu Thr Ser Ala			
410	415	420	
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Pro Ser Val Gln Glu Pro Thr Leu Thr Glu Thr Glu Pro Gln Thr Lys			
425	430	435	
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440	445	450	455
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475	480	485	
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520	525	530	535
gaa gag aaa aca gct gac aaa aat aag ctt gaa ggc gct ggg tct gcg 1866			

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 Thr Ile Ala Glu Val Glu Met Pro Phe Tyr Glu Asp Lys Ser Gly Met
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 tct aag tac ttt gaa aca tct gca ttg aaa gaa gac atg acg aga agc 1962
 Ser Lys Tyr Phe Glu Thr Ser Ala Leu Lys Glu Asp Met Thr Arg Ser
 570 575 580
 act gag ttg ggc agt gat tac tat gag ctg agt gac tcc aga gga agt 2010
 Thr Glu Leu Gly Ser Asp Tyr Tyr Glu Leu Ser Asp Ser Arg Gly Ser
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 gcc cag gaa tct ctt gat act ata tct cct aag aac caa cat gat gaa 2058
 Ala Gln Glu Ser Leu Asp Thr Ile Ser Pro Lys Asn Gln His Asp Glu
 600 605 610 615
 aag gaa ctt cag gca aaa gca tcc cag cct agt cct cca gca cag gaa 2106
 Lys Glu Leu Gln Ala Lys Ala Ser Gln Pro Ser Pro Pro Ala Gln Glu
 620 625 630
 gca ggg tac agc act ctt gct cag agt tat aca ccc ggt cat cca tcc 2154
 Ala Gly Tyr Ser Thr Leu Ala Gln Ser Tyr Thr Pro Gly His Pro Ser
 635 640 645
 gag tta cct gaa gaa cca agt tct cct caa gag aga atg ttc act att 2202
 Glu Leu Pro Glu Glu Pro Ser Ser Pro Gln Glu Arg Met Phe Thr Ile
 650 655 660
 gac ccc aaa gtt tat gga gag aaa agg gac ctt cat agt aag aat aag 2250
 Asp Pro Lys Val Tyr Gly Glu Lys Arg Asp Leu His Ser Lys Asn Lys
 665 670 675
 gac gat ctg aca ctt agt cga agc tta ggg ctt ggt gga agg tct gca 2298
 Asp Asp Leu Thr Leu Ser Arg Ser Leu Gly Leu Gly Gly Arg Ser Ala
 680 685 690 695

ata gaa caa aga agc atg tct atc aac ttg cct atg tct tgc ctt gat	2346
Ile Glu Gln Arg Ser Met Ser Ile Asn Leu Pro Met Ser Cys Leu Asp	
700 705 710	
tcc att gcc ctt ggg ttt aac ttt ggc cgg ggc cat gat ctt tcc cct	2394
Ser Ile Ala Leu Gly Phe Asn Phe Gly Arg Gly His Asp Leu Ser Pro	
715 720 725	
ctg gct tct gat att cta acc aac act agt gga agc atg gat gaa gga	2442
Leu Ala Ser Asp Ile Leu Thr Asn Thr Ser Gly Ser Met Asp Glu Gly	
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Asp Asp Tyr Leu Pro Pro Thr Thr Pro Ala Val Glu Lys Met Pro Cys	
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Phe Pro Ile Glu Ser Lys Glu Glu Glu Asp Lys Ala Glu Gln Ala Lys	
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Val Thr Gly Gly Gln Thr Ile Gln Val Glu Thr Ser Ser Glu Ser Pro	
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Phe Pro Ala Lys Glu Tyr Tyr Lys Asn Gly Thr Val Met Ala Pro Asp	
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Leu Pro Glu Met Leu Asp Leu Ala Gly Thr Arg Ser Arg Leu Ala Ser	
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gtg agt gca gat gct gag gtt gcc agg agg aaa tca gtc cca tca gag	2730
Val Ser Ala Asp Ala Glu Val Ala Arg Arg Lys Ser Val Pro Ser Glu	
825 830 835	
gct atg ctt gca gag agt agt acc agt ttg cca cct gtc gct gat gaa	2778
Ala Met Leu Ala Glu Ser Ser Thr Ser Leu Pro Pro Val Ala Asp Glu	

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Ser Pro Val Thr Val Lys Pro Asp Ser Gln Leu Glu Asp Met Gly Tyr				
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Cys Val Phe Asn Lys Tyr Thr Val Pro Leu Pro Ser Pro Val Gln Asp				
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Ser Glu Asn Leu Ser Gly Glu Ser Gly Ser Phe Tyr Glu Gly Thr Asp				
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Lys Leu Ala Ala Ala Gly Arg Val Lys Asp Glu Phe Thr Ala Glu Lys				
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Phe Asp His Asp Arg Lys Ala Asn Asp Lys Leu Asp Thr Val Leu Glu				
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Lys Ser Glu Glu His Ile Asp Ser Lys Glu His Ala Lys Glu Ser Glu				
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Glu Met Gly Gly Lys Val Glu Leu Phe Gly Leu Gly Ile Thr Tyr Asp				
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 Pro Thr Thr Lys Ala Asp Gln Gly Leu Asp Phe Ala Ala Thr Lys Ala
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 gag cca agt cag tta gat ata aaa gtc agt gac ttt gga cag atg gct 3402
 Glu Pro Ser Gln Leu Asp Ile Lys Val Ser Asp Phe Gly Gln Met Ala
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 Ser Gly Met Asn Val Asp Ala Gly Lys Ala Ile Glu Leu Lys Phe Glu
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 1080 1085 1090 1095
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 Ser Phe Met Gly Val Glu Ser Gly His Ile Lys Glu Gly Gly Lys Val
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 Asn Glu Thr Glu Val Lys Glu Lys Val Thr Lys Pro Asp Leu Val His
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 Ile Lys Tyr Thr Arg Pro Thr His Leu Ser Cys Val Lys Arg Lys Thr
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 1675 1680 1685
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 1785 1790 1795
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 c 5881

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<211> 1828

<212> PRT

<213> Mus musculus

<400> 680

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 Asp Gln Gly Gly Ala Gly Glu Gly Leu Ser Arg Asn Ala Asn Gly Phe
 35 40 45
 Pro Tyr Arg Glu Glu Glu Glu Gly Ala Phe Gly Glu His Arg Ser Gln
 50 55 60

Gly Thr Tyr Ser Asp Thr Lys Glu Asn Gly Ile Asn Gly Glu Leu Thr
 65 70 75 80
 Ser Ala Asp Arg Glu Thr Ala Glu Glu Val Ser Ala Arg Ile Val Gln
 85 90 95
 Val Val Thr Ala Glu Ala Val Ala Val Leu Lys Gly Glu Gln Glu Lys
 100 105 110
 Glu Ala Gln Tyr Lys Asp Gln Pro Ala Ala Leu Pro Leu Ala Ala Glu
 115 120 125
 Glu Thr Ala Asn Leu Pro Pro Ser Pro Pro Pro Ser Pro Ala Ser Glu
 130 135 140
 Gln Thr Ala Thr Val Glu Glu Asp Leu Leu Thr Ala Ser Lys Met Glu
 145 150 155 160
 Phe Pro Glu Gln Glu Lys Phe Pro Ser Ser Phe Ala Glu Pro Leu Asp
 165 170 175
 Lys Gly Glu Met Glu Phe Lys Met Pro Ser Lys Pro Gly Glu Asp Phe
 180 185 190
 Glu His Ala Ala Leu Val Pro Asp Thr Ser Lys Thr Pro Gln Asp Lys
 195 200 205
 Lys Asp Leu Gln Gly Met Glu Gly Glu Lys Leu Pro Pro Val Pro Phe
 210 215 220
 Ala Gln Thr Phe Gly Thr Asn Leu Glu Asp Arg Lys Gln Ser Thr Glu
 225 230 235 240
 Pro Ser Ile Val Met Pro Ser Ile Gly Leu Ser Ala Glu Pro Pro Ala
 245 250 255
 Pro Lys Glu Pro Lys Asp Trp Phe Ile Glu Met Pro Thr Glu Ser Lys
 260 265 270
 Lys Asp Glu Trp Gly Leu Ala Ala Pro Ile Ser Pro Gly Pro Leu Thr
 275 280 285
 Pro Met Arg Glu Lys Asp Val Leu Glu Asp Ile Pro Arg Trp Glu Gly

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Lys Gln Phe Asp Ser Pro Met Pro Ser Pro Phe His Gly Gly Ser Phe		
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Thr Leu Pro Leu Asp Thr Met Lys Asn Glu Arg Val Ser Glu Gly Pro		
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Arg Pro Phe Ala Pro Val Phe Phe Gln Ser Asp Asp Lys Val Ser Leu		
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Gln Asp Pro Ser Ala Leu Ala Thr Ser Lys Glu Ser Ser Lys Asp Glu		
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Glu Pro Leu Lys Asp Lys Ala Asp Lys Val Ala Asp Val Ser Ile Ser		
	370	375
Glu Val Thr Thr Leu Leu Gly Asn Val His Ser Pro Val Val Glu Gly		
385	390	395
Tyr Val Gly Glu Asn Ile Ser Gly Glu Val Lys Val Thr Thr Asp Gln		
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Glu Lys Lys Glu Thr Ser Ala Pro Ser Val Gln Glu Pro Thr Leu Thr		
	420	425
Glu Thr Glu Pro Gln Thr Lys Leu Asp Glu Lys Ser Thr Val Ser Ile		
	435	440
Glu Glu Ala Val Ala Lys Glu Glu Glu Ser Leu Lys Leu Arg Asp Asp		
	450	455
Lys Thr Gly Val Ile Gln Thr Ser Thr Glu Gln Ser Phe Ser Lys Glu		
465	470	475
Asp Gln Lys Gly Gln Glu His Thr Ile Asp Glu Leu Lys Gln Asp Ser		
	485	490
Phe Pro Ile Ser Leu Glu Gln Ala Val Thr Asp Ala Ala Met Thr Ser		
	500	505
Lys Thr Leu Gly Lys Val Thr Ser Glu Pro Glu Ala Val Ser Glu Arg		
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Arg Glu Ile Gln Gly Leu Phe Glu Glu Lys Thr Ala Asp Lys Asn Lys
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 Leu Glu Gly Ala Gly Ser Ala Thr Ile Ala Glu Val Glu Met Pro Phe
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 Tyr Glu Asp Lys Ser Gly Met Ser Lys Tyr Phe Glu Thr Ser Ala Leu
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 Lys Glu Asp Met Thr Arg Ser Thr Glu Leu Gly Ser Asp Tyr Tyr Glu
 580 585 590
 Leu Ser Asp Ser Arg Gly Ser Ala Gln Glu Ser Leu Asp Thr Ile Ser
 595 600 605
 Pro Lys Asn Gln His Asp Glu Lys Glu Leu Gln Ala Lys Ala Ser Gln
 610 615 620
 Pro Ser Pro Pro Ala Gln Glu Ala Gly Tyr Ser Thr Leu Ala Gln Ser
 625 630 635 640
 Tyr Thr Pro Gly His Pro Ser Glu Leu Pro Glu Glu Pro Ser Ser Pro
 645 650 655
 Gln Glu Arg Met Phe Thr Ile Asp Pro Lys Val Tyr Gly Glu Lys Arg
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 Asp Leu His Ser Lys Asn Lys Asp Asp Leu Thr Leu Ser Arg Ser Leu
 675 680 685
 Gly Leu Gly Gly Arg Ser Ala Ile Glu Gln Arg Ser Met Ser Ile Asn
 690 695 700
 Leu Pro Met Ser Cys Leu Asp Ser Ile Ala Leu Gly Phe Asn Phe Gly
 705 710 715 720
 Arg Gly His Asp Leu Ser Pro Leu Ala Ser Asp Ile Leu Thr Asn Thr
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 Ser Gly Ser Met Asp Glu Gly Asp Asp Tyr Leu Pro Pro Thr Thr Pro
 740 745 750
 Ala Val Glu Lys Met Pro Cys Phe Pro Ile Glu Ser Lys Glu Glu Glu

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Glu Thr Ser Ser Glu Ser Pro Phe Pro Ala Lys Glu Tyr Tyr Lys Asn		
785	790	795
Gly Thr Val Met Ala Pro Asp Leu Pro Glu Met Leu Asp Leu Ala Gly		
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Thr Arg Ser Arg Leu Ala Ser Val Ser Ala Asp Ala Glu Val Ala Arg		
820	825	830
Arg Lys Ser Val Pro Ser Glu Ala Met Leu Ala Glu Ser Ser Thr Ser		
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Leu Pro Pro Val Ala Asp Glu Ser Pro Val Thr Val Lys Pro Asp Ser		
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Gln Leu Glu Asp Met Gly Tyr Cys Val Phe Asn Lys Tyr Thr Val Pro		
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Leu Pro Ser Pro Val Gln Asp Ser Glu Asn Leu Ser Gly Glu Ser Gly		
885	890	895
Ser Phe Tyr Glu Gly Thr Asp Asp Lys Val Arg Arg Asp Leu Ala Thr		
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Asp Leu Ser Leu Ile Glu Val Lys Leu Ala Ala Ala Gly Arg Val Lys		
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Asp Glu Phe Thr Ala Glu Lys Glu Ala Thr Pro Pro Thr Ser Ala Asp		
930	935	940
Lys Ser Gly Leu Ser Arg Glu Phe Asp His Asp Arg Lys Ala Asn Asp		
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Lys Leu Asp Thr Val Leu Glu Lys Ser Glu Glu His Ile Asp Ser Lys		
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Gln Ala Glu Pro Lys Asp Gly Ser Pro Asp Ala Pro Ala Thr Pro Glu		
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Tyr Lys Asp Glu Thr Thr Ile Asp Asp Ser Ile Met Asp Ala Asp Ser		
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Leu Trp Val Asp Thr Gln Asp Asp Asp Arg Ser Ile Leu Thr Glu Gln		
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Pro Ser Leu Glu Lys His Arg Lys Glu Lys Pro Phe Lys Thr Gly Arg		
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Gly Arg Ile Ser Thr Pro Glu Arg Lys Val Ala Lys Lys Glu Pro Ser		
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 Thr Asp Asn Ile Lys Tyr Gln Pro Lys Gly Gly Gln Val Gln Ile Val

1685	1690	1695
Thr Lys Lys Ile Asp Leu Ser His Val Thr Ser Lys Cys Gly Ser Leu		
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Lys Asn Ile Arg His Arg Pro Gly Gly Gly Arg Val Lys Ile Glu Ser		
1715	1720	1725
Val Lys Leu Asp Phe Lys Glu Lys Ala Gln Ala Lys Val Gly Ser Leu		
1730	1735	1740
Asp Asn Ala His His Val Pro Gly Gly Gly Asn Val Lys Ile Asp Ser		
745	1750	1755
Gln Lys Leu Asn Phe Arg Glu His Ala Lys Ala Arg Val Asp His Gly		
1765	1770	1775
Ala Glu Ile Ile Thr Gln Ser Pro Ser Arg Ser Ser Val Ala Ser Pro		
1780	1785	1790
Arg Arg Leu Ser Asn Val Ser Ser Ser Gly Ser Ile Asn Leu Leu Glu		
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<210> 681

<211> 202

<212> DNA

<213> Mus musculus

<400> 681

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202

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<211> 1560

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<400> 682

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<211> 3147

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1457).. (2944)

<400> 683

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Met Thr Val Met Ser Gly Glu Asn Ala Asp Glu Ala

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5

10

tcg acc gct cca ggt cac ccc cag gat ggc agc tac ccg agg cag gcg 1540

Ser Thr Ala Pro Gly His Pro Gln Asp Gly Ser Tyr Pro Arg Gln Ala

15

20

25

gac cac gac gac cac gaa tgc tgc gag cgc gta gta atc aac atc tcc 1588

Asp His Asp Asp His Glu Cys Cys Glu Arg Val Val Ile Asn Ile Ser

30

35

40

ggg ctg cgc ttc gaa acg cag ctg aag act ctg gca cag ttc ccc aac 1636

Gly Leu Arg Phe Glu Thr Gln Leu Lys Thr Leu Ala Gln Phe Pro Asn

45

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55

60

acg ctg ctg ggc aac ccg aag aaa cgc atg cgc tac ttt gac ccc ctg 1684

Thr Leu Leu Gly Asn Pro Lys Lys Arg Met Arg Tyr Phe Asp Pro Leu

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70

75

agg aac gag tac ttc ttt gac cgc aac cgg ccc agc ttc gat gcc atc 1732

Arg Asn Glu Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile

80

85

90

ctt tat tac tac cag tcc ggg ggc cgc ctg cgc agg ccg gtc aac gtg 1780
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 Pro Leu Asp Met Phe Ser Glu Glu Ile Lys Phe Tyr Glu Leu Gly Glu
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 Glu Ala Met Glu Lys Phe Arg Glu Asp Glu Gly Phe Ile Lys Glu Glu
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 Leu Pro Glu Leu Lys Asp Asp Lys Asp Phe Thr Gly Thr Ile His Arg
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 atc gac aac acc aca gtc atc tat act tcc aac atc ttc aca gac cct 2116
 Ile Asp Asn Thr Thr Val Ile Tyr Thr Ser Asn Ile Phe Thr Asp Pro
 205 210 215 220
 ttc ttc att gtg gaa acc ttg tgt atc atc tgg ttc tct ttt gag ctg 2164
 Phe Phe Ile Val Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe Glu Leu
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240	245	250	
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Ile Met Asn Phe Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe Ile Thr			
255	260	265	
ctg ggc acg gag ata gct gag cag gag gga aat cag aag ggc gag cag			2308
Leu Gly Thr Glu Ile Ala Glu Gln Glu Gly Asn Gln Lys Gly Glu Gln			
270	275	280	
gcc act tcc ctg gcc atc ctc agg gtc atc cgc ttg gta agg gtg ttc			2356
Ala Thr Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe			
285	290	295	300
aga atc ttc aaa ctc tcc cgc cac tcc aag ggc ctt cag atc ctg ggc			2404
Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly			
305	310	315	
cag acc ctc aaa gct agt atg agg gag tta ggg ctg ctc atc ttt ttc			2452
Gln Thr Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe			
320	325	330	
ctc ttc att ggg gtc ata ctg ttt tct agc gca gtg tac ttt gcg gag			2500
Leu Phe Ile Gly Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu			
335	340	345	
gcg gaa gaa gct gag tcg cac ttc tcc agt atc ccc gat gct ttc tgg			2548
Ala Glu Glu Ala Glu Ser His Phe Ser Ser Ile Pro Asp Ala Phe Trp			
350	355	360	
tgg gcg gtg gtg tcc atg acc act gtg gga tac ggt gac atg tac cct			2596
Trp Ala Val Val Ser Met Thr Thr Val Gly Tyr Gly Asp Met Tyr Pro			
365	370	375	380
gtg aca att gga ggc aag atc gtg ggc tcc ttg tgt gcc atc gct ggt			2644
Val Thr Ile Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly			
385	390	395	
gtg ctg aca att gcc ctg ccc gta cct gtc att gtg tcc aat ttc aac			2692

Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn
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Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu Gln Ala Gln Leu Leu
415 420 425
cat gtt agt tct cct aac tta gcc tct gac agt gac ctc agc cgc cgc 2788
His Val Ser Ser Pro Asn Leu Ala Ser Asp Ser Asp Leu Ser Arg Arg
430 435 440
agc tcc tct act atc agc aag tct gag tac atg gag atc gaa gag gat 2836
Ser Ser Ser Thr Ile Ser Lys Ser Glu Tyr Met Glu Ile Glu Glu Asp
445 450 455 460
atg aac aat agc ata gcc cat tac aga cag gct aat atc aga act ggt 2884
Met Asn Asn Ser Ile Ala His Tyr Arg Gln Ala Asn Ile Arg Thr Gly
465 470 475
aac tgc acc aca gct gat caa aac tgc gtt aat aag agc aag ctc ctg 2932
Asn Cys Thr Thr Ala Asp Gln Asn Cys Val Asn Lys Ser Lys Leu Leu
480 485 490
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Thr Asp Val
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<211> 495

<212> PRT

<213> Mus musculus

<400> 684

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 35 40 45
 Glu Thr Gln Leu Lys Thr Leu Ala Gln Phe Pro Asn Thr Leu Leu Gly
 50 55 60
 Asn Pro Lys Lys Arg Met Arg Tyr Phe Asp Pro Leu Arg Asn Glu Tyr
 65 70 75 80
 Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr Tyr
 85 90 95
 Gln Ser Gly Gly Arg Leu Arg Arg Pro Val Asn Val Pro Leu Asp Met
 100 105 110
 Phe Ser Glu Glu Ile Lys Phe Tyr Glu Leu Gly Glu Glu Ala Met Glu
 115 120 125
 Lys Phe Arg Glu Asp Glu Gly Phe Ile Lys Glu Glu Glu Arg Pro Leu
 130 135 140
 Pro Glu Lys Glu Tyr Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr Pro
 145 150 155 160
 Glu Ser Ser Gly Pro Ala Arg Val Ile Ala Ile Val Ser Val Met Val
 165 170 175
 Ile Leu Ile Ser Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Leu
 180 185 190
 Lys Asp Asp Lys Asp Phe Thr Gly Thr Ile His Arg Ile Asp Asn Thr
 195 200 205
 Thr Val Ile Tyr Thr Ser Asn Ile Phe Thr Asp Pro Phe Phe Ile Val
 210 215 220

Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe Glu Leu Val Val Arg Phe
 225 230 235 240
 Phe Ala Cys Pro Ser Lys Thr Asp Phe Phe Lys Asn Ile Met Asn Phe
 245 250 255
 Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe Ile Thr Leu Gly Thr Glu
 260 265 270
 Ile Ala Glu Gln Glu Gly Asn Gln Lys Gly Glu Gln Ala Thr Ser Leu
 275 280 285
 Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys
 290 295 300
 Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Lys
 305 310 315 320
 Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly
 325 330 335
 Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Ala Glu Glu Ala
 340 345 350
 Glu Ser His Phe Ser Ser Ile Pro Asp Ala Phe Trp Trp Ala Val Val
 355 360 365
 Ser Met Thr Thr Val Gly Tyr Gly Asp Met Tyr Pro Val Thr Ile Gly
 370 375 380
 Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile
 385 390 395 400
 Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn Tyr Phe Tyr His
 405 410 415
 Arg Glu Thr Glu Gly Glu Glu Gln Ala Gln Leu Leu His Val Ser Ser
 420 425 430
 Pro Asn Leu Ala Ser Asp Ser Asp Leu Ser Arg Arg Ser Ser Ser Thr
 435 440 445
 Ile Ser Lys Ser Glu Tyr Met Glu Ile Glu Glu Asp Met Asn Asn Ser

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<210> 685

<211> 1030

<212> DNA

<213> Mus musculus

<400> 685

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1030

<210> 686

<211> 1286

<212> DNA

<213> Mus musculus

<400> 686

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1286

<210> 687

<211> 980

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<221> CDS

<222> (26).. (769)

<400> 687

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Glu Leu Arg Asn Arg Thr Pro Ser Asp Val Lys Glu Leu Val Leu Asp
 10               15               20               25
aac tgt aag tca att gaa ggc aaa atc gaa ggc ctc acg gat gag ttt      148
Asn Cys Lys Ser Ile Glu Gly Lys Ile Glu Gly Leu Thr Asp Glu Phe
          30               35               40
gaa gaa ctg gaa ttc cta agt aca atc aac gta ggc ctc acc tcc att      196
Glu Glu Leu Glu Phe Leu Ser Thr Ile Asn Val Gly Leu Thr Ser Ile
          45               50               55
tcc aac tta cca aag tta aac aaa ctc aag aag ctt gaa tta agc gaa      244
Ser Asn Leu Pro Lys Leu Asn Lys Leu Lys Lys Leu Glu Leu Ser Glu
          60               65               70
aac aga atc tca ggg gac ctg gaa gta ttg gca gag aaa tgt ccg aac      292
Asn Arg Ile Ser Gly Asp Leu Glu Val Leu Ala Glu Lys Cys Pro Asn

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ata gag ccg ctg aag aag tta gag aat ctc aag agc cta gac ctg ttt	388		
Ile Glu Pro Leu Lys Lys Leu Glu Asn Leu Lys Ser Leu Asp Leu Phe			
110	115	120	
aac tgt gag gtg acc aac ctg aat gcc tac cga gaa aac gtg ttc aag	436		
Asn Cys Glu Val Thr Asn Leu Asn Ala Tyr Arg Glu Asn Val Phe Lys			
125	130	135	
ctc ctg ccc cag gtc atg tac ctc gat ggc tat gac agg gac aac aag	484		
Leu Leu Pro Gln Val Met Tyr Leu Asp Gly Tyr Asp Arg Asp Asn Lys			
140	145	150	
gag gcc ccc gac tcc gat gtt gag ggc tac gtg gag gat gac gac gag	532		
Glu Ala Pro Asp Ser Asp Val Glu Gly Tyr Val Glu Asp Asp Asp Glu			
155	160	165	
gaa gat gag gat gag gag gag tat gat gaa tat gcc cag cta gtg gaa	580		
Glu Asp Glu Asp Glu Glu Glu Tyr Asp Glu Tyr Ala Gln Leu Val Glu			
170	175	180	185
gat gaa gag gaa gag gtt gag gag gaa gaa ggg gag gaa gag gat gtg	628		
Asp Glu Glu Glu Glu Val Glu Glu Glu Glu Gly Glu Glu Glu Asp Val			
190	195	200	
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Ser Gly Glu Glu Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val			
205	210	215	
gat gac gag gaa gac gaa gaa gaa gct ggt gaa gaa gaa ggg agt cag	724		
Asp Asp Glu Glu Asp Glu Glu Glu Ala Gly Glu Glu Glu Gly Ser Gln			
220	225	230	
aag cga aaa cga gaa ccg gac gat gag ggc gaa gag gat gac taa	769		

Lys Arg Lys Arg Glu Pro Asp Asp Glu Gly Glu Glu Asp Asp

235

240

245

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<210> 688

<211> 247

<212> PRT

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20

25

30

Lys Ile Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser

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75

80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Lys His Leu Asn Leu Ser

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95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu

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<211> 3273

<212> DNA

<213> Mus musculus

<400> 689

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<211> 901

<212> DNA

<213> Mus musculus

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<221> CDS

<222> (121).. (651)

<400> 690

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 Arg Ile Met Gly Lys Lys Ala Cys Lys Ile Phe Lys His Tyr Lys Asp
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 Ser Leu Gln Ile Cys Val Gly Ser Ser Thr Lys Val Ala Ser Val Tyr
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<211> 176

<212> PRT

<213> Mus musculus

<400> 691

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<210> 693

<211> 4042

<212> DNA

<213> *Mus musculus*

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<213> Mus musculus

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<211> 223

<212> DNA

<213> Mus musculus

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<212> DNA

<213> Mus musculus

<400> 696

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<210> 697

<211> 587

<212> DNA

<213> Mus musculus

<400> 697

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<212> DNA

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<222> (404).. (5641)

<400> 698

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Met Ser Ala Arg

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 40 45 50
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 105 110 115

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Gln Asp Ser Leu Ala Ala Arg Asp Gly Asp Ile Gln Glu Gly Asp Val	
215 220 225	
gtc ttg aag ata aat ggt act gtg aca gaa aat atg tca ttg aca gat	1135
Val Leu Lys Ile Asn Gly Thr Val Thr Glu Asn Met Ser Leu Thr Asp	
230 235 240	
gca aaa aca ctg ata gaa agg tct aaa ggc aag tta aaa atg gta gtg	1183
Ala Lys Thr Leu Ile Glu Arg Ser Lys Gly Lys Leu Lys Met Val Val	
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Gln Arg Asp Glu Arg Ala Thr Leu Leu Asn Val Pro Asp Leu Ser Asp	

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agt atc cat tct gct aat gcc tcg gaa aga gat gac att tca gaa att			1279
Ser Ile His Ser Ala Asn Ala Ser Glu Arg Asp Asp Ile Ser Glu Ile			
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cag tca cta gcg tca gac cat tca ggt cgc tcg cat gac agg cca ccc			1327
Gln Ser Leu Ala Ser Asp His Ser Gly Arg Ser His Asp Arg Pro Pro			
295	300	305	
cgc cgc agc cag tca cga tct cct gac caa cgt tca gag ccc tcc gat			1375
Arg Arg Ser Gln Ser Arg Ser Pro Asp Gln Arg Ser Glu Pro Ser Asp			
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His Ser Thr Gln Ser Pro Gln Gln Pro Ser Asn Gly Ser Leu Arg Ser			
325	330	335	340
aga gag gaa gag cga atg tct aaa cct ggg gcc atc tca act cct gta			1471
Arg Glu Glu Glu Arg Met Ser Lys Pro Gly Ala Ile Ser Thr Pro Val			
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aaa cat gta gac gat cat cca ccc aaa gca gtg gaa gaa gtt aca gtt			1519
Lys His Val Asp Asp His Pro Pro Lys Ala Val Glu Glu Val Thr Val			
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Glu Lys Asn Glu Lys Gln Thr Pro Thr Leu Pro Glu Pro Lys Pro Val			
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Tyr Ala Gln Val Gly Gln Pro Asp Val Asp Leu Pro Val Ser Pro Ser			
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Asp Gly Ala Leu Pro Asn Ser Ala His Glu Asp Gly Ile Leu Arg Pro			
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agc atg aaa ctg gta aaa ttc aga aaa gga gat agt gtg ggt ttg cga			1711

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 Leu Tyr Asn Gly Lys Leu Gly Ser Trp Leu Ala Ile Arg Ile Gly Lys
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Asp Arg Ala Asp Phe Trp Arg Phe Arg Gly Leu Arg Ser Ser Lys Arg	
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Asn Leu Arg Lys Ser Arg Glu Asp Leu Ser Ala Gln Pro Val Gln Thr	
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Lys Phe Pro Ala Tyr Glu Arg Val Val Leu Arg Glu Ala Gly Phe Leu	
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Arg Pro Val Thr Ile Phe Gly Pro Ile Ala Asp Val Ala Arg Glu Lys	
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Leu Ala Arg Glu Glu Pro Asp Ile Tyr Gln Ile Ala Lys Ser Glu Leu	
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Thr Ile Lys Gln Ile Ile Asp Gln Asp Lys His Ala Leu Leu Asp Val	
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Thr Pro Asn Ala Val Asp Arg Leu Asn Tyr Ala Gln Trp Tyr Pro Ile	
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 Ser Tyr Leu Ser Ala Pro Gly Ser Glu Tyr Ser Met Tyr Ser Thr Asp
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 Ser Ser Gly Met His His Glu Asn Gln Thr Tyr Pro Pro Tyr Ser Pro
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Ser Arg Thr Arg Tyr Glu Gln Leu Pro Arg Thr Ser Thr Leu Arg His			
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Glu Ala Gln Pro Tyr Ser Ser Thr Gly Pro Lys Ser Ser Glu Pro Lys			
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Gly	Phe	Gly	Ile	Ala	Ile	Ser	Gly	Gly	Arg	Asp	Asn	Pro	His	Phe	Gln
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Ser	Gly	Glu	Thr	Ser	Ile	Val	Ile	Ser	Asp	Val	Leu	Lys	Gly	Gly	Pro
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Ala	Glu	Gly	Gln	Leu	Gln	Glu	Asn	Asp	Arg	Val	Ala	Met	Val	Asn	Gly
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 Gln Ile Pro Val Ser His Pro Asp Pro Glu Pro Val Ser Asp Asn Glu
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 Asp Asp Ser Tyr Asp Glu Glu Val His Asp Pro Arg Ala Gly Arg Gly
 130 135 140
 Ala Leu Ala Asn Arg Arg Ser Glu Lys Ser Trp Ala Arg Asp Arg Ser
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 Ala Ser Ser Gln Pro Ala Lys Pro Thr Lys Val Thr Leu Val Lys Ser
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 Arg Lys Asn Glu Glu Tyr Gly Leu Arg Pro Ala Ser His Ile Phe Val
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 Pro Lys Pro Val Tyr Ala Gln Val Gly Gln Pro Asp Val Asp Leu Pro
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 435 440 445
 Gly Val Leu Glu Asp Ser Pro Ala Ala Lys Glu Gly Leu Glu Glu Gly
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 Asp Gln Ile Leu Arg Val Asn Asn Val Asp Phe Thr Asn Ile Ile Arg
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 Ser Ser Lys Arg Asn Leu Arg Lys Ser Arg Glu Asp Leu Ser Ala Gln
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 Pro Val Gln Thr Lys Phe Pro Ala Tyr Glu Arg Val Val Leu Arg Glu
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 Ala Gly Phe Leu Arg Pro Val Thr Ile Phe Gly Pro Ile Ala Asp Val
 645 650 655
 Ala Arg Glu Lys Leu Ala Arg Glu Glu Pro Asp Ile Tyr Gln Ile Ala
 660 665 670
 Lys Ser Glu Leu Arg Asp Ala Gly Thr Asp His Arg Ser Ser Gly Ile
 675 680 685
 Ile Arg Leu His Thr Ile Lys Gln Ile Ile Asp Gln Asp Lys His Ala
 690 695 700
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 Trp Tyr Pro Ile Val Val Phe Leu Asn Pro Asp Ser Lys Gln Gly Val
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 Lys Thr Met Arg Met Arg Leu Cys Pro Glu Ser Arg Lys Ser Ala Arg
 740 745 750
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 Pro Tyr Ser Pro Gln Ala Gln Pro Gln Ala Ile His Arg Ile Asp Ser
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 Pro Gly Leu Lys Pro Ala Ser Gln Gln Lys Ala Glu Ala Ser Ser Pro
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 Val Pro Tyr Leu Ser Pro Glu Thr Thr Pro Ala Ser Ser Ala Ser Ala
 930 935 940
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 945 950 955 960
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 965 970 975
 Pro Ser Ala Glu Ala Ala His Val Gly Leu Arg Gly Glu Gly Pro Pro
 980 985 990
 Leu Pro Pro His Ala Asp Pro Ala Lys Val Tyr Arg Lys Glu Pro Tyr

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Gly His Pro Gly Gln Arg Pro Asp Lys Glu Pro Asn Leu Ala Tyr Glu		
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Pro Gln Leu Pro Tyr Ile Glu Lys Gln Ala Ser Arg Asp Leu Glu Gln		
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Pro Ser Tyr Arg Tyr Glu Val Ser Ser Tyr Thr Asp Gln Phe Ser Arg		
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Asn Tyr Asp His Arg Leu Arg Phe Glu Asp Arg Ile Pro Thr Tyr Glu		
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Asp Gln Trp Ser Tyr Tyr Asp Asp Lys Gln Pro Tyr Gln Pro Arg Pro		
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His Gly Ala Ala Val Val Pro Pro Leu Ile Pro Ser Ser Gln Gln Lys		
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Thr Gly Val Ser Ile Ile Ile Pro Gln Gly Ala Ile Pro Glu Gly Ile			
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Glu Gln Glu Ile Tyr Phe Lys Val Cys Arg Asp Asn Ser Ile Leu Pro			
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Pro Leu Asp Lys Glu Lys Gly Glu Thr Leu Leu Ser Pro Leu Val Met			
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Cys Gly Pro His Gly Leu Lys Phe Leu Lys Pro Val Glu Leu Arg Leu

1700

1705

1710

Pro His Cys Asp Pro Lys Thr Trp Gln Asn Lys Cys Leu Pro Gly Asp

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1725

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1740

Phe

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<400> 700

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15

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 Lys Lys Arg Phe Leu Arg Lys Pro Asn Val Ala Glu Ala Gly Glu Gln
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 ttc gcc cag cta gcc cgg gag ctg cgc gcc cag gag tgc ctg cct tat 489
 Phe Ala Gln Leu Ala Arg Glu Leu Arg Ala Gln Glu Cys Leu Pro Tyr
 50 55 60 65
 gct gcc tgg tgc cag ctg gct gtg gcg cgc tgc cag cag gcg ctc ttc 537
 Ala Ala Trp Cys Gln Leu Ala Val Ala Arg Cys Gln Gln Ala Leu Phe
 70 75 80
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 His Gly Pro Gly Glu Ala Leu Ala Leu Thr Glu Ala Ala Arg Leu Phe
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 Tyr Gly Glu Pro Leu Gln Ala Ala Ala Ser Leu Gly Asp Ala Val Arg
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 Leu His Leu Glu Leu Gly Gln Pro Ala Ala Ala Ala Ala Leu Cys Leu
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 Glu Leu Ala Ala Ala Leu Arg Ala Val Gly Gln Pro Ala Ala Ala Ala
 150 155 160
 ggt cac ttt cag cgg gct gcc cag cgg cac ctg ccc ctg atg cca ctg 825
 Gly His Phe Gln Arg Ala Ala Gln Arg His Leu Pro Leu Met Pro Leu

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Ala Ala Leu Gln Ala Leu Gly Asp Ala Ala Ser Cys Gln Leu Leu Ala			
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cgc gac tac aca ggc gcc ctg gcg cta ttt aca cgc atg caa cgc ctg			921
Arg Asp Tyr Thr Gly Ala Leu Ala Leu Phe Thr Arg Met Gln Arg Leu			
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Ala Arg Glu His Gly Gly His Pro Val Gln Gln Leu Glu Leu Leu Pro			
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Pro Val Leu Gly Ser Thr Leu Pro Leu Pro Gln Pro Pro Asp His Ala			
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Pro Gly Ser Val Ala Pro Ser Pro Gly Thr Leu Gly Ala Phe Ala Asp			
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gtc cta gtc agg tgt gag gtg tcc cgt gta ctg ctg ctg ctg ctc ctg			1161
Val Leu Val Arg Cys Glu Val Ser Arg Val Leu Leu Leu Leu Leu Leu			
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caa cca cca cct gcc aag ctg ctg ccc gag cat gcc cag acc ctg gag			1209
Gln Pro Pro Pro Ala Lys Leu Leu Pro Glu His Ala Gln Thr Leu Glu			
290	295	300	305
aag tac tcc tgg gag gct ttc gat ggc cat ggc cag gat acc agc ggc			1257
Lys Tyr Ser Trp Glu Ala Phe Asp Gly His Gly Gln Asp Thr Ser Gly			
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Gln Leu Pro Glu Glu Leu Phe Leu Leu Leu Gln Ser Leu Val Met Ala
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 Ala Gln Glu Lys Asp Thr Glu Gly Ile Lys Lys Leu Gln Val Glu Met
 340 345 350
 tgg cca ctg cta acc gct gag cag aac cac ctc ctc cac ctc gtt ctg 1401
 Trp Pro Leu Leu Thr Ala Glu Gln Asn His Leu Leu His Leu Val Leu
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<211> 380

<212> PRT

<213> Mus musculus

<400> 701

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 Gln Phe Ala Gln Leu Ala Arg Glu Leu Arg Ala Gln Glu Cys Leu Pro
 50 55 60
 Tyr Ala Ala Trp Cys Gln Leu Ala Val Ala Arg Cys Gln Gln Ala Leu
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 Phe His Gly Pro Gly Glu Ala Leu Ala Leu Thr Glu Ala Ala Arg Leu
 85 90 95
 Phe Leu Arg Gln Glu Cys Asp Ala Arg Gln Arg Leu Gly Cys Pro Ala
 100 105 110
 Ala Tyr Gly Glu Pro Leu Gln Ala Ala Ala Ser Leu Gly Asp Ala Val
 115 120 125
 Arg Leu His Leu Glu Leu Gly Gln Pro Ala Ala Ala Ala Leu Cys
 130 135 140
 Leu Glu Leu Ala Ala Ala Leu Arg Ala Val Gly Gln Pro Ala Ala Ala
 145 150 155 160
 Ala Gly His Phe Gln Arg Ala Ala Gln Arg His Leu Pro Leu Met Pro
 165 170 175
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 Ala Arg Asp Tyr Thr Gly Ala Leu Ala Leu Phe Thr Arg Met Gln Arg
 195 200 205
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 Pro Gln Pro Pro Ser Gly Pro Gln Pro Pro Leu Ser Gly Pro Gln Pro
 225 230 235 240
 Arg Pro Val Leu Gly Ser Thr Leu Pro Leu Pro Gln Pro Pro Asp His
 245 250 255
 Ala Pro Gly Ser Val Ala Pro Ser Pro Gly Thr Leu Gly Ala Phe Ala
 260 265 270

Asp Val Leu Val Arg Cys Glu Val Ser Arg Val Leu Leu Leu Leu
 275 280 285
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 290 295 300
 Glu Lys Tyr Ser Trp Glu Ala Phe Asp Gly His Gly Gln Asp Thr Ser
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 Gly Gln Leu Pro Glu Glu Leu Phe Leu Leu Leu Gln Ser Leu Val Met
 325 330 335
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<222> (160).. (1818)

<400> 702

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Leu Val Cys Leu Leu Met Ser Arg Ser Ile Ala Lys Glu Val Ser Glu			
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cac tgt agc cac atg att ggg aat gga cac ctg aag gtc ctg cag cag			318
His Cys Ser His Met Ile Gly Asn Gly His Leu Lys Val Leu Gln Gln			
	40	45	50
ttg atc gac agt caa atg gag act tca tgc cag att gcc ttt gaa ttt			366
Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln Ile Ala Phe Glu Phe			
	55	60	65
gta gac cag gaa cag ctg gat gat cct gtt tgc tac cta aag aag gcc			414
Val Asp Gln Glu Gln Leu Asp Asp Pro Val Cys Tyr Leu Lys Lys Ala			
	70	75	80
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Phe Phe Leu Val Gln Asp Ile Ile Asp Glu Thr Met Arg Phe Lys Asp			
	90	95	100
aac acc ccc aat gct aac gcc acc gag agg ctc cag gaa ctc tcc aat			510
Asn Thr Pro Asn Ala Asn Ala Thr Glu Arg Leu Gln Glu Leu Ser Asn			
	105	110	115
aac ctg aac agc tgc ttc acc aag gac tat gag gag cag aac aag gcc			558
Asn Leu Asn Ser Cys Phe Thr Lys Asp Tyr Glu Glu Gln Asn Lys Ala			
	120	125	130
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Cys Val Arg Thr Phe His Glu Thr Pro Leu Gln Leu Leu Glu Lys Ile			
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Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu Tyr Pro Lys Ala Thr	
185	190 195
cct agc agt gac ccg gcc tct gcc tcc cct cac cag ccc ccc gcc ccc	798
Pro Ser Ser Asp Pro Ala Ser Ala Ser Pro His Gln Pro Pro Ala Pro	
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tcc atg gcc cct ctg gct ggc ttg gct tgg gat gat tct cag agg aca	846
Ser Met Ala Pro Leu Ala Gly Leu Ala Trp Asp Asp Ser Gln Arg Thr	
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Gln Pro His Pro Ser Ala Gly Gly Pro Val Pro Gly Val Glu Asp Ile	
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Leu Glu Ser Ser Leu Gly Thr Asn Trp Val Leu Glu Glu Ala Ser Gly	
295	300 305

1710/2644

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<211> 552

<212> PRT

<213> Mus musculus

<400> 703

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Lys Val Leu Gln Gln Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
      50             55             60
Ile Ala Phe Glu Phe Val Asp Gln Glu Gln Leu Asp Asp Pro Val Cys
      65             70             75             80
Tyr Leu Lys Lys Ala Phe Phe Leu Val Gln Asp Ile Ile Asp Glu Thr
      85             90             95
Met Arg Phe Lys Asp Asn Thr Pro Asn Ala Asn Ala Thr Glu Arg Leu
      100            105            110
Gln Glu Leu Ser Asn Asn Leu Asn Ser Cys Phe Thr Lys Asp Tyr Glu
      115            120            125
Glu Gln Asn Lys Ala Cys Val Arg Thr Phe His Glu Thr Pro Leu Gln
      130            135            140
Leu Leu Glu Lys Ile Lys Asn Phe Phe Asn Glu Thr Lys Asn Leu Leu
      145            150            155            160
Glu Lys Asp Trp Asn Ile Phe Thr Lys Asn Cys Asn Asn Ser Phe Ala
      165            170            175
Lys Cys Ser Ser Arg Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
      180            185            190
Tyr Pro Lys Ala Thr Pro Ser Ser Asp Pro Ala Ser Ala Ser Pro His
      195            200            205

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Gln Pro Pro Ala Pro Ser Met Ala Pro Leu Ala Gly Leu Ala Trp Asp
 210 215 220
 Asp Ser Gln Arg Thr Glu Gly Ser Ser Leu Leu Pro Ser Glu Leu Pro
 225 230 235 240
 Leu Arg Ile Glu Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser
 245 250 255
 Thr Cys Gln Thr Leu Glu Ser Thr Glu Gln Pro Asn His Gly Asp Arg
 260 265 270
 Leu Thr Glu Asp Ser Gln Pro His Pro Ser Ala Gly Gly Pro Val Pro
 275 280 285
 Gly Val Glu Asp Ile Leu Glu Ser Ser Leu Gly Thr Asn Trp Val Leu
 290 295 300
 Glu Glu Ala Ser Gly Glu Ala Ser Glu Gly Phe Leu Thr Gln Glu Ala
 305 310 315 320
 Lys Phe Ser Pro Ser Thr Pro Val Gly Gly Ser Ile Gln Ala Glu Thr
 325 330 335
 Asp Arg Pro Arg Ala Leu Ser Ala Ser Pro Phe Pro Lys Ser Thr Glu
 340 345 350
 Asp Gln Lys Pro Val Asp Ile Thr Asp Arg Pro Leu Thr Glu Val Asn
 355 360 365
 Pro Met Arg Pro Ile Gly Gln Thr Gln Asn Asn Thr Pro Glu Lys Thr
 370 375 380
 Asp Gly Thr Ser Thr Leu Arg Glu Asp His Gln Glu Pro Gly Ser Pro
 385 390 395 400
 His Ile Ala Thr Pro Asn Pro Gln Arg Val Ser Asn Ser Ala Thr Pro
 405 410 415
 Val Ala Gln Leu Leu Leu Pro Lys Ser His Ser Trp Gly Ile Val Leu
 420 425 430
 Pro Leu Gly Glu Leu Glu Gly Lys Arg Ser Thr Arg Asp Arg Arg Ser

435 440 445
 Pro Ala Glu Leu Glu Gly Gly Ser Ala Ser Glu Gly Ala Ala Arg Pro
 450 455 460
 Val Ala Arg Phe Asn Ser Ile Pro Leu Thr Asp Thr Gly His Val Glu
 465 470 475 480
 Gln His Glu Gly Ser Ser Asp Pro Gln Ile Pro Glu Ser Val Phe His
 485 490 495
 Leu Leu Val Pro Gly Ile Ile Leu Val Leu Leu Thr Val Gly Gly Leu
 500 505 510
 Leu Phe Tyr Lys Trp Lys Trp Arg Ser His Arg Asp Pro Gln Thr Leu
 515 520 525
 Asp Ser Ser Val Gly Arg Pro Glu Asp Ser Ser Leu Thr Gln Asp Glu
 530 535 540
 Asp Arg Gln Val Glu Leu Pro Val
 545 550

<210> 704

<211> 408

<212> DNA

<213> Mus musculus

<400> 704

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 cagcataaga atgggatgat gcatggcgac taaattcact tctactgcac acacatagag 180
 cagaagtgca gctacactgt ggatgctcat tgcagagatg gcactatcga gattccctcg 240
 tgcttcgagg agcacagtta tctggctttc tggataacgg atgcatcaga acatgacagc 300
 gtgctggagt cggttccaga atcagaattg aatgtcgtat acgtatatct gcttgtcttg 360
 aggaatccat ctgatatagc agcatatagt tactcggatt gcctcagt 408

<210> 705

<211> 563

<212> DNA

<213> Mus musculus

<400> 705

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 ggatgtatga caacatgtcc accatgggtg acataaagga agagaagctg gagaagctca 180
 cgcaggatga gatcatctct aagaccaagc aagtgatcca ggggctggaa gctcgaagaa 240
 tgagcacaac tccatcctgc agagtttgct ggagacgctg aagtgcttga agaaggatga 300
 cgagagcaac ctgggtggaag agaaatccag catgatccgc aagtccttgg agatgcttga 360
 gcttggcctg agcgaggcgc aggtgatgat ggcgctgtcc aatcacctga atgctgttga 420
 gtccgagaag caaaagctcc gcgctcaggt tcgacggctg tgcaggagaa ccagtggctg 480
 cgggatgagc tggccacacg cagcagaagt tgcagaagag cgagcagtcg gtggcgcact 540
 ggaaggagga gaagaacacc tgg 563

<210> 706

<211> 488

<212> DNA

<213> Mus musculus

<400> 706

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 cgggctgcgg gatccactgt tcggcagaga aaaaatgcc gctgtgggac ccggagcgca 180
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tttatgctgc acatttgggg caagtacacg cgatcataga ttgggctaca tccatctgtc 360
 atctgaagaa gaagaagaag gaaaaaaacc caacatatct tggaccaaaa gtgtagtgat 420
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<210> 707

<211> 1067

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (84).. (866)

<400> 707

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Met Ala Lys Glu Trp Gly Tyr Ala Arg His

1

5

10

aat ggt cct gat cac tgg cat gaa ctt tat cca att gcc aaa ggg gac 161

Asn Gly Pro Asp His Trp His Glu Leu Tyr Pro Ile Ala Lys Gly Asp

15

20

25

aac cag tca ccc att gaa ctg cat act aaa gac atc aag cat gac ccc 209

Asn Gln Ser Pro Ile Glu Leu His Thr Lys Asp Ile Lys His Asp Pro

30

35

40

tct ctg cag ccc tgg tca gca tct tat gac cct ggc tct gct aag acc 257

Ser Leu Gln Pro Trp Ser Ala Ser Tyr Asp Pro Gly Ser Ala Lys Thr

45

50

55

atc ctg aac aat ggg aag acc tgc aga gtt gtg ttt gat gat act tat 305

Ile Leu Asn Asn Gly Lys Thr Cys Arg Val Val Phe Asp Asp Thr Tyr
 60 65 70
 gac agg tct atg ctg agg ggt ggt cct ctc tct cgg ccc tac cga ctt 353
 Asp Arg Ser Met Leu Arg Gly Gly Pro Leu Ser Arg Pro Tyr Arg Leu
 75 80 85 90
 cgc caa ttc cat ctt cac tgg ggc tcc tct gat gac cac ggc tct gag 401
 Arg Gln Phe His Leu His Trp Gly Ser Ser Asp Asp His Gly Ser Glu
 95 100 105
 cac acc gtg gac gga gta aaa tac gct gct gag ctt cac ctg gtt cac 449
 His Thr Val Asp Gly Val Lys Tyr Ala Ala Glu Leu His Leu Val His
 110 115 120
 tgg aat cca agg tat aac acc ttt gga gag gct ctg aag cag cct gat 497
 Trp Asn Pro Arg Tyr Asn Thr Phe Gly Glu Ala Leu Lys Gln Pro Asp
 125 130 135
 ggc atc gct gtg gtt ggc att ttg ctg aag ata gga cgg gag aaa ggc 545
 Gly Ile Ala Val Val Gly Ile Leu Leu Lys Ile Gly Arg Glu Lys Gly
 140 145 150
 gag ttc cag att ctt ctt gat gcc ttg gac aaa att aag acg aag ggc 593
 Glu Phe Gln Ile Leu Leu Asp Ala Leu Asp Lys Ile Lys Thr Lys Gly
 155 160 165 170
 aag gag gcc cct ttt aca cac ttt gac cca tca tgc ctg ttc cct gct 641
 Lys Glu Ala Pro Phe Thr His Phe Asp Pro Ser Cys Leu Phe Pro Ala
 175 180 185
 tgc cgg gac tat tgg acc tat cac ggc tcc ttc acc acg ccg ccc tgc 689
 Cys Arg Asp Tyr Trp Thr Tyr His Gly Ser Phe Thr Thr Pro Pro Cys
 190 195 200
 gag gag tgc att gtg tgg ctg ctg ctc aaa gag ccc atg act gtg agc 737
 Glu Glu Cys Ile Val Trp Leu Leu Leu Lys Glu Pro Met Thr Val Ser
 205 210 215

tca gac cag atg gcc aag ctg cgc agc ctc ttc tcc agc gca gag aat 785
 Ser Asp Gln Met Ala Lys Leu Arg Ser Leu Phe Ser Ser Ala Glu Asn

220

225

230

gag ccc ccg gtg cct ctg gtg ggg aat tgg cgc cct cct cag cct gtc 833

Glu Pro Pro Val Pro Leu Val Gly Asn Trp Arg Pro Pro Gln Pro Val

235

240

245

250

aag ggc agg gtg gtg agg gcc tcc ttc aag taa ggctctgagc ttgccctctt 886

Lys Gly Arg Val Val Arg Ala Ser Phe Lys

255

260

cgggcaagaa actctgcccc tgaagagcct gcttgctctc tctgtgctc cctactccaa 946

gctgtccgac gaacacctag ggaagaggag aagcagtcac atgcaaccgc agtgcctttt 1006

gacatgatct caccagaag catgaatttc acacctaaca ttcttaataa ccacctgttc 1066

t

1067

<210> 708

<211> 260

<212> PRT

<213> Mus musculus

<400> 708

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1

5

10

15

His Glu Leu Tyr Pro Ile Ala Lys Gly Asp Asn Gln Ser Pro Ile Glu

20

25

30

Leu His Thr Lys Asp Ile Lys His Asp Pro Ser Leu Gln Pro Trp Ser

35

40

45

Ala Ser Tyr Asp Pro Gly Ser Ala Lys Thr Ile Leu Asn Asn Gly Lys

50

55

60

Thr Cys Arg Val Val Phe Asp Asp Thr Tyr Asp Arg Ser Met Leu Arg

65 70 75 80
 Gly Gly Pro Leu Ser Arg Pro Tyr Arg Leu Arg Gln Phe His Leu His
 85 90 95
 Trp Gly Ser Ser Asp Asp His Gly Ser Glu His Thr Val Asp Gly Val
 100 105 110
 Lys Tyr Ala Ala Glu Leu His Leu Val His Trp Asn Pro Arg Tyr Asn
 115 120 125
 Thr Phe Gly Glu Ala Leu Lys Gln Pro Asp Gly Ile Ala Val Val Gly
 130 135 140
 Ile Leu Leu Lys Ile Gly Arg Glu Lys Gly Glu Phe Gln Ile Leu Leu
 145 150 155 160
 Asp Ala Leu Asp Lys Ile Lys Thr Lys Gly Lys Glu Ala Pro Phe Thr
 165 170 175
 His Phe Asp Pro Ser Cys Leu Phe Pro Ala Cys Arg Asp Tyr Trp Thr
 180 185 190
 Tyr His Gly Ser Phe Thr Thr Pro Pro Cys Glu Glu Cys Ile Val Trp
 195 200 205
 Leu Leu Leu Lys Glu Pro Met Thr Val Ser Ser Asp Gln Met Ala Lys
 210 215 220
 Leu Arg Ser Leu Phe Ser Ser Ala Glu Asn Glu Pro Pro Val Pro Leu
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 Ala Ser Phe Lys
 260

<210> 709

<211> 634

<212> DNA

<213> Mus musculus

<400> 709

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gggcttgttt cccttatgtg cattttaaat gaagatcaag aatctttgta aaatgatgaa 540
aatitactat gtaaattgctt gatggatctt cttgctagtg tagcttctag aagggtgctt 600
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<210> 710

<211> 975

<212> DNA

<213> Mus musculus

<400> 710

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tcggatggcg tcttcaagta tgtgctgatt cgagtccact tagcagagcc ttctggggat 180
ccggcgaagg agtgcaagga aatcgtgcgt ggctacaaat gggctgagta ccacgcggac 240
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ggcggggcga tctcgcatca gagccaggac aggaagatac acgtgtatgg ctactctatg 360
ggttacggtc gtgccagca ctctggtttc aatgagaaga tcaagccagg tacctgacta 420
tgaggtcacg tgggctgacg aggctattag agtctgcccg accggcacgc ccggaattaa 480

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 gggacagggg tcccagtagg gtggggccct tgtgcggtgg agagaagccg gagaigctca 720
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 gtgtttttgt gttgcgtggg ggggaggacg gaagaggatg gaggggtttc gaaatactag 840
 tgggcagatt ttgggtgttt tgggataaga gattttttgt ggaggagaga aaaatgaggc 900
 ggggtgtgtg gagagaagct gtgtgagggc gtgatgtatt gtgcggaggg gtgggagagg 960
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975

<210> 711

<211> 1061

<212> DNA

<213> Mus musculus

<400> 711

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 ggaacaggct caagtacgc ctgaccggcg acgaggtaga gaagatctgc atgcagcggc 180
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 cttcgtgggt acaaggcat ccgcacctgc tcacgcacga cgcgtgtacc atccgctaac 420
 ctgaccgct catcaaggc aacgacaccg tgcagatctc gctagacagc ggaggaatca 480
 ccgatgcgat caagttgat accggcaact gtcatcgta cctgagcgcg aactcgggtg 540
 atcgcgtcat acaaccgcag cgcaccgggt ccttgaagtg tcaactaaag atgcacgaat 600
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ttgggagggc cctgtgagct ggcgggtgcag ctctgtgtgt cagtgttata gacgcngnng 840
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<210> 712

<211> 456

<212> DNA

<213> Mus musculus

<400> 712

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 ctgttgagag gtgacaggag aaatcacaaa atgtgacgtt cttgtgact gtccgtgata 420
 tcacggaaat aaattctgca gataattttg caatct 456

<210> 713

<211> 533

<212> DNA

<213> Mus musculus

<400> 713

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ctggctccc tcgcgctcc tgcctcact ctgcatttaa agcgattcca gcaggctggt 180
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 gagagaactg caagctgca cctctccaat ctgtttcttc acggtgacat tccacaagat 420
 tgtgaaatgg aatcaaccaa agggcagtg tttcacatca gcgatacaca tgtgcaagct 480
 gtgcctataa ctaaagtact gaactcaca gcgtatctcc tattttatga gag 533

<210> 714

<211> 1077

<212> DNA

<213> Mus musculus

<400> 714

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 gttttatgtt cgagccccag gaagagtcaa cataataggt gagcacatag attactgtgg 240
 atattccgtt attcccatgg ctgtggaaca agacatgta atagctgtgg aacctgtgaa 300
 aacacacact ctccaactgg ctaatacaga ccccttgtat ccagacttca gtactacagc 360
 taataacatc tgtatcgaca agaccaaacc tctatggcac aactacttct tgtgtggctt 420
 taagggaatt caggaacact ttggccttag taagctgcct ggaatgaatt gcctggtaga 480
 tggaaatata ccccccgagt cgggccgtgt ccagniccag tgctctggtt tgctgtcctg 540
 ggtagtgaa cncacggcgc ntggagttag agttcgtaag tggacttgca gaatctgtgc 600
 cagagtacnc gtcatagccn tgaagtaggg catgaccagc catactatcg ttcgagagan 660
 gactcccagt agtagagtig cgtcntagan gactatggta cgtccagtgg gagctntgtg 720
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 cggggaggtc gtgtgtcaac aaacagagag aagggtagt cggaaagttg tccctctcgt 840
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tctctgcgca tggcgcggtatagttcacca ccactgngac caaccgggta cctgtcgtct 960
 gtgaaagaga taacgcctct tcttatgita tcacggagcg acggctctct ctctccacgc 1020
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<210> 715

<211> 402

<212> DNA

<213> Mus musculus

<400> 715

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 aacaacaaca cctcgtccag tcattgtaga accctggagc agtttgatga tgaagatggt 240
 ttacagagaa gctaatgcag aaaactcaac agtaccataa ggaaagagga acagccacca 300
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<210> 716

<211> 5841

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (96).. (3593)

<400> 716

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Met Ser Trp Phe Ser Gly
1 5

ctc ctg gtt ccc aaa gtg gat gaa cgg aaa aca gct tgg ggg gaa cgc 161
Leu Leu Val Pro Lys Val Asp Glu Arg Lys Thr Ala Trp Gly Glu Arg
10 15 20

aat ggg cag aag cgc cca cgc cac gcg aat cga gcc agt ggc ttc tgc 209
Asn Gly Gln Lys Arg Pro Arg His Ala Asn Arg Ala Ser Gly Phe Cys
25 30 35

gca cct cgc tac atg agc tgc ctc aag aat gcg gag cca ccc agc ccc 257
Ala Pro Arg Tyr Met Ser Cys Leu Lys Asn Ala Glu Pro Pro Ser Pro
40 45 50

act cct gca gct cac act cgg tgc ccc tgg cag gat gaa gcc ttc atc 305
Thr Pro Ala Ala His Thr Arg Cys Pro Trp Gln Asp Glu Ala Phe Ile
55 60 65 70

agg agg gcg ggc ccg ggc agg ggt gtg gag ctg ggg ctg cgg tca gtg 353
Arg Arg Ala Gly Pro Gly Arg Gly Val Glu Leu Gly Leu Arg Ser Val
75 80 85

gcc ttg ggg ttt gac gac act gag gtg acc aca ccg atg ggc aca gct 401
Ala Leu Gly Phe Asp Asp Thr Glu Val Thr Thr Pro Met Gly Thr Ala
90 95 100

gaa gtg gca ccg gat aca tcg cct cgg agc ggt ccg tcc tgc tgg cac 449
Glu Val Ala Pro Asp Thr Ser Pro Arg Ser Gly Pro Ser Cys Trp His
105 110 115

cgg ctt gtg cag gtg ttc cag tct aag cag ttc cgc tct gcc aag ctg 497
Arg Leu Val Gln Val Phe Gln Ser Lys Gln Phe Arg Ser Ala Lys Leu
120 125 130

gag cgg ctg tac cag cgg tac ttc ttc cag atg aac cag agc agc ctc 545
Glu Arg Leu Tyr Gln Arg Tyr Phe Phe Gln Met Asn Gln Ser Ser Leu

135	140	145	150	
acg ctg ctc atg gcg gtg ctg gtg ctg ctc atg gct gta ctg ttg act	593			
Thr Leu Leu Met Ala Val Leu Val Leu Leu Met Ala Val Leu Leu Thr				
	155	160	165	
ttc cac gct gcg cct gcc cag cct cag cct gct tac gtg gcc ctg ctg	641			
Phe His Ala Ala Pro Ala Gln Pro Gln Pro Ala Tyr Val Ala Leu Leu				
	170	175	180	
acc tgt gcc tct gtc ctt ttt gtg gta ctc atg gtg gtg tgt aac cga	689			
Thr Cys Ala Ser Val Leu Phe Val Val Leu Met Val Val Cys Asn Arg				
	185	190	195	
cac agc ttc cgc cag gac tcc atg tgg gtg gtg agc tat gtg gtc ctg	737			
His Ser Phe Arg Gln Asp Ser Met Trp Val Val Ser Tyr Val Val Leu				
	200	205	210	
ggc atc cta gca gcc gtg caa gtc ggg ggt gcc ctg gca gcc aat cca	785			
Gly Ile Leu Ala Ala Val Gln Val Gly Gly Ala Leu Ala Ala Asn Pro				
	215	220	225	230
cac agc ccc tcg gcg ggc ctt tgg tgc ccc gtg ttc ttc gtc tac atc	833			
His Ser Pro Ser Ala Gly Leu Trp Cys Pro Val Phe Phe Val Tyr Ile				
	235	240	245	
acc tac act ctt ctt ccc att cgc atg cga gcc gca gta ctc agc ggc	881			
Thr Tyr Thr Leu Leu Pro Ile Arg Met Arg Ala Ala Val Leu Ser Gly				
	250	255	260	
ctg ggc ctc tct act ctg cat ttg att ttg gcc tgg cag ctc aac agc	929			
Leu Gly Leu Ser Thr Leu His Leu Ile Leu Ala Trp Gln Leu Asn Ser				
	265	270	275	
agc gac ccc ttc ctt tgg aag cag ctc ggt gct aac gtg gtg ctc ttc	977			
Ser Asp Pro Phe Leu Trp Lys Gln Leu Gly Ala Asn Val Val Leu Phe				
	280	285	290	
ctc tgc acc aat gcc atc ggt gtc tgc aca cac tac cct gct gaa gtg	1025			

Leu Cys Thr Asn Ala Ile Gly Val Cys Thr His Tyr Pro Ala Glu Val	
295	300 305 310
tct cag cgc caa gct ttt cag gag acc cga ggt tac atc cag gcg cgg	1073
Ser Gln Arg Gln Ala Phe Gln Glu Thr Arg Gly Tyr Ile Gln Ala Arg	
315	320 325
ctg cac ctg cag cat gag aac cgt cag cag gaa cgg ctg ctg cta tcg	1121
Leu His Leu Gln His Glu Asn Arg Gln Gln Glu Arg Leu Leu Leu Ser	
330	335 340
gtg ttg ccc cag cac gtt gcc atg gag atg aaa gaa gac atc aac aca	1169
Val Leu Pro Gln His Val Ala Met Glu Met Lys Glu Asp Ile Asn Thr	
345	350 355
aaa aaa gag gac atg atg ttc cat aag atc tac atc cag aag cat gat	1217
Lys Lys Glu Asp Met Met Phe His Lys Ile Tyr Ile Gln Lys His Asp	
360	365 370
aat gtc agc atc ctg ttt gcg gac att gag ggc ttc acc agc ctg gcc	1265
Asn Val Ser Ile Leu Phe Ala Asp Ile Glu Gly Phe Thr Ser Leu Ala	
375	380 385 390
tcc cag tgc act gca cag gaa ctg gtc atg acc ttg aat gag ctc ttt	1313
Ser Gln Cys Thr Ala Gln Glu Leu Val Met Thr Leu Asn Glu Leu Phe	
395	400 405
gcc cgg ttt gac aag ctg gct gcg gag aat cac tgt ctg agg atc aag	1361
Ala Arg Phe Asp Lys Leu Ala Ala Glu Asn His Cys Leu Arg Ile Lys	
410	415 420
atc tta gga gac tgt tac tac tgc gtg tca ggg ctg ccc gag gcc cgg	1409
Ile Leu Gly Asp Cys Tyr Tyr Cys Val Ser Gly Leu Pro Glu Ala Arg	
425	430 435
gca gat cac gcc cac tgc tgt gtg gag atg ggg gta gac atg atc gaa	1457
Ala Asp His Ala His Cys Cys Val Glu Met Gly Val Asp Met Ile Glu	
440	445 450

gcc atc tgc ctg gtg cgt gag gta aca ggt gtg aac gtg aac atg cgt 1505
 Ala Ile Ser Leu Val Arg Glu Val Thr Gly Val Asn Val Asn Met Arg
 455 460 465 470
 gtg ggc atc cac agc gga cgt gtg cat tgc ggc gtc ctt ggc cta cgg 1553
 Val Gly Ile His Ser Gly Arg Val His Cys Gly Val Leu Gly Leu Arg
 475 480 485
 aaa tgg cag ttt gat gtc tgg tca aac gat gtg acc ctg gct aac cac 1601
 Lys Trp Gln Phe Asp Val Trp Ser Asn Asp Val Thr Leu Ala Asn His
 490 495 500
 atg gag gcc ggg ggc ggc cgg cgc atc cac atc act cgg gct aca ctg 1649
 Met Glu Ala Gly Gly Gly Arg Arg Ile His Ile Thr Arg Ala Thr Leu
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 cag tac ttg aac ggg gac tat gag gtg gag cca ggc cgt ggt ggt gaa 1697
 Gln Tyr Leu Asn Gly Asp Tyr Glu Val Glu Pro Gly Arg Gly Gly Glu
 520 525 530
 cgc aat gcg tac ctc aag gag cag tgc att gag acc ttc ctc ata ctt 1745
 Arg Asn Ala Tyr Leu Lys Glu Gln Cys Ile Glu Thr Phe Leu Ile Leu
 535 540 545 550
 ggc gcc agc caa aaa cgg aaa gag gag aaa gcc atg ctg gcc aag ctt 1793
 Gly Ala Ser Gln Lys Arg Lys Glu Glu Lys Ala Met Leu Ala Lys Leu
 555 560 565
 cag cgg aca cgg gcc aac tcc atg gaa gga ctg atg ccc cgc tgg gtt 1841
 Gln Arg Thr Arg Ala Asn Ser Met Glu Gly Leu Met Pro Arg Trp Val
 570 575 580
 cct gac cgt gcc ttc tcc cgg acc aag gac tct aag gca ttc cgc cag 1889
 Pro Asp Arg Ala Phe Ser Arg Thr Lys Asp Ser Lys Ala Phe Arg Gln
 585 590 595
 atg ggc att gat gat tct agc aaa gac aac cgg ggt gcc caa gat gct 1937
 Met Gly Ile Asp Asp Ser Ser Lys Asp Asn Arg Gly Ala Gln Asp Ala

600	605	610	
ctg aac cct gaa gat gag gtg gat gag ttc ctg ggc cga gcc atc gat			1985
Leu Asn Pro Glu Asp Glu Val Asp Glu Phe Leu Gly Arg Ala Ile Asp			
615	620	625	630
gcc cga agc atc gac caa ctg cgt aag gac cat gtg cgc cgg ttc ctg			2033
Ala Arg Ser Ile Asp Gln Leu Arg Lys Asp His Val Arg Arg Phe Leu			
635	640	645	
ctc acc ttc cag aga gag gat ctt gag aag aag tat tca cgg aaa gta			2081
Leu Thr Phe Gln Arg Glu Asp Leu Glu Lys Lys Tyr Ser Arg Lys Val			
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gat cct cgc ttc gga gcc tac gtc gcc tgt gcc ctc ctg gtt ttt tgc			2129
Asp Pro Arg Phe Gly Ala Tyr Val Ala Cys Ala Leu Leu Val Phe Cys			
665	670	675	
ttc atc tgt ttt atc cag ctc ctt gtg ttc cca tac tcc acc ctg ata			2177
Phe Ile Cys Phe Ile Gln Leu Leu Val Phe Pro Tyr Ser Thr Leu Ile			
680	685	690	
ctc ggg att tat gcc gct atc ttc ctg ctg ttg ctg gtc act gtg ctg			2225
Leu Gly Ile Tyr Ala Ala Ile Phe Leu Leu Leu Leu Val Thr Val Leu			
695	700	705	710
atc tgt gcc gtg tgc tcc tgc ggt tct ttc ttc ccc aag gcc ctg caa			2273
Ile Cys Ala Val Cys Ser Cys Gly Ser Phe Phe Pro Lys Ala Leu Gln			
715	720	725	
cgc ctg tcc cgc aat att gtc cgc tca cgg gtg cac agc acc gcg gtt			2321
Arg Leu Ser Arg Asn Ile Val Arg Ser Arg Val His Ser Thr Ala Val			
730	735	740	
gga atc ttc tcg gtt ctg ctt gtg ttc atc tct gcc atc gcc aac atg			2369
Gly Ile Phe Ser Val Leu Leu Val Phe Ile Ser Ala Ile Ala Asn Met			
745	750	755	
ttt acc tgt aat cac acc cca ata agg acc tgc gcg gcc cgg atg ctg			2417

Phe Thr Cys Asn His Thr Pro Ile Arg Thr Cys Ala Ala Arg Met Leu
760 765 770
aac tta aca cca gcg gat gtc acc gcc tgc cac cta caa cag ctc aat 2465
Asn Leu Thr Pro Ala Asp Val Thr Ala Cys His Leu Gln Gln Leu Asn
775 780 785 790
tac tct ctg gga ctg gat gct ccc ctg tgt gag ggc acc gca ccc acc 2513
Tyr Ser Leu Gly Leu Asp Ala Pro Leu Cys Glu Gly Thr Ala Pro Thr
795 800 805
tgc agc ttc cct gag tac ttc gtc ggg aac gtg ctg ctg agt ctt cta 2561
Cys Ser Phe Pro Glu Tyr Phe Val Gly Asn Val Leu Leu Ser Leu Leu
810 815 820
gcc agc tct gtc ttc cta cac atc agc agc atc ggc aag ctg gcc atg 2609
Ala Ser Ser Val Phe Leu His Ile Ser Ser Ile Gly Lys Leu Ala Met
825 830 835
acc ttc atc ttg ggg ttc acc tac ttg gtg ctg ctt ttg ctg ggt ccc 2657
Thr Phe Ile Leu Gly Phe Thr Tyr Leu Val Leu Leu Leu Leu Gly Pro
840 845 850
ccg gcc gcc atc ttt gac aac tat gat cta ctg ctt ggc gtc cat ggc 2705
Pro Ala Ala Ile Phe Asp Asn Tyr Asp Leu Leu Leu Gly Val His Gly
855 860 865 870
ttg gct tcc tcc aat gag acc ttt gat ggg ctg gac tgc cca gct gtg 2753
Leu Ala Ser Ser Asn Glu Thr Phe Asp Gly Leu Asp Cys Pro Ala Val
875 880 885
ggg agg gta gcg ctc aaa tat atg acc ccc gtg att ctg ctg gtg ttt 2801
Gly Arg Val Ala Leu Lys Tyr Met Thr Pro Val Ile Leu Leu Val Phe
890 895 900
gcc ctg gca ctg tat ctg cat gca caa cag gtg gaa tcg act gcc cgc 2849
Ala Leu Ala Leu Tyr Leu His Ala Gln Gln Val Glu Ser Thr Ala Arg
905 910 915

ctg gac ttc ctg tgg aag tta cag gca aca ggg gag aag gag gag atg 2897
 Leu Asp Phe Leu Trp Lys Leu Gln Ala Thr Gly Glu Lys Glu Glu Met
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 gag gag cta cag gca tac aac cgg agg ttg ctg cat aac att ctt ccc 2945
 Glu Glu Leu Gln Ala Tyr Asn Arg Arg Leu Leu His Asn Ile Leu Pro
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 aag gac gtg gcc gcc cac ttc ctg gcc cgg gaa cgc cgc aac gat gag 2993
 Lys Asp Val Ala Ala His Phe Leu Ala Arg Glu Arg Arg Asn Asp Glu
 955 960 965
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 Ala Asn Phe Ser Glu Phe Tyr Val Glu Leu Glu Ala Asn Asn Glu Gly
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 Val Glu Cys Leu Arg Leu Leu Asn Glu Ile Ile Ala Asp Phe Asp Glu
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 Gly Ser Thr Tyr Met Ala Ala Ser Gly Leu Asn Ala Ser Thr Tyr Asp
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 Gln Val Gly Arg Ser His Ile Thr Ala Leu Ala Asp Tyr Ala Met Arg
 1050 1055 1060
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 Leu Met Glu Gln Met Lys His Ile Asn Glu His Ser Phe Asn Asn Phe

1065	1070	1075	
cag atg aag atc ggg tlg aac atg ggt ccg gtt gla gca ggc gtc att			3377
Gln Met Lys Ile Gly Leu Asn Met Gly Pro Val Val Ala Gly Val Ile			
1080	1085	1090	
ggg gcc cga aag cca cag tat gac atc tgg gga aat acc gtg aat gtt			3425
Gly Ala Arg Lys Pro Gln Tyr Asp Ile Trp Gly Asn Thr Val Asn Val			
1095	1100	1105	1110
tcc agt cgt atg gac agc act gga gtt cct gac cga ata cag gtg act			3473
Ser Ser Arg Met Asp Ser Thr Gly Val Pro Asp Arg Ile Gln Val Thr			
	1115	1120	1125
acg gac cta tac cag gtt cta gct gcc aag ggc tac cag ctg gag tgt			3521
Thr Asp Leu Tyr Gln Val Leu Ala Ala Lys Gly Tyr Gln Leu Glu Cys			
	1130	1135	1140
cga ggg gtg gtc aag gtg aag gga aag ggg gag atg acc acc tac ttc			3569
Arg Gly Val Val Lys Val Lys Gly Lys Gly Glu Met Thr Thr Tyr Phe			
	1145	1150	1155
ctc aac ggg ggc ccc agc agt tag cagagtgcag cagctgagat tcaaccgaag			3623
Leu Asn Gly Gly Pro Ser Ser			
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<211> 1165

<212> PRT

<213> Mus musculus

<400> 717

Met Ser Trp Phe Ser Gly Leu Leu Val Pro Lys Val Asp Glu Arg Lys

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Thr Ala Trp Gly Glu Arg Asn Gly Gln Lys Arg Pro Arg His Ala Asn

20 25 30

Arg Ala Ser Gly Phe Cys Ala Pro Arg Tyr Met Ser Cys Leu Lys Asn

35 40 45

Ala Glu Pro Pro Ser Pro Thr Pro Ala Ala His Thr Arg Cys Pro Trp

50 55 60

Gln Asp Glu Ala Phe Ile Arg Arg Ala Gly Pro Gly Arg Gly Val Glu

65 70 75 80

Leu Gly Leu Arg Ser Val Ala Leu Gly Phe Asp Asp Thr Glu Val Thr

85 90 95

Thr Pro Met Gly Thr Ala Glu Val Ala Pro Asp Thr Ser Pro Arg Ser

100 105 110

Gly Pro Ser Cys Trp His Arg Leu Val Gln Val Phe Gln Ser Lys Gln

115 120 125

Phe Arg Ser Ala Lys Leu Glu Arg Leu Tyr Gln Arg Tyr Phe Phe Gln

130 135 140

Met Asn Gln Ser Ser Leu Thr Leu Leu Met Ala Val Leu Val Leu Leu

145 150 155 160

Met Ala Val Leu Leu Thr Phe His Ala Ala Pro Ala Gln Pro Gln Pro

165 170 175

Ala Tyr Val Ala Leu Leu Thr Cys Ala Ser Val Leu Phe Val Val Leu

180 185 190

Met Val Val Cys Asn Arg His Ser Phe Arg Gln Asp Ser Met Trp Val
 195 200 205
 Val Ser Tyr Val Val Leu Gly Ile Leu Ala Ala Val Gln Val Gly Gly
 210 215 220
 Ala Leu Ala Ala Asn Pro His Ser Pro Ser Ala Gly Leu Trp Cys Pro
 225 230 235 240
 Val Phe Phe Val Tyr Ile Thr Tyr Thr Leu Leu Pro Ile Arg Met Arg
 245 250 255
 Ala Ala Val Leu Ser Gly Leu Gly Leu Ser Thr Leu His Leu Ile Leu
 260 265 270
 Ala Trp Gln Leu Asn Ser Ser Asp Pro Phe Leu Trp Lys Gln Leu Gly
 275 280 285
 Ala Asn Val Val Leu Phe Leu Cys Thr Asn Ala Ile Gly Val Cys Thr
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 His Tyr Pro Ala Glu Val Ser Gln Arg Gln Ala Phe Gln Glu Thr Arg
 305 310 315 320
 Gly Tyr Ile Gln Ala Arg Leu His Leu Gln His Glu Asn Arg Gln Gln
 325 330 335
 Glu Arg Leu Leu Leu Ser Val Leu Pro Gln His Val Ala Met Glu Met
 340 345 350
 Lys Glu Asp Ile Asn Thr Lys Lys Glu Asp Met Met Phe His Lys Ile
 355 360 365
 Tyr Ile Gln Lys His Asp Asn Val Ser Ile Leu Phe Ala Asp Ile Glu
 370 375 380
 Gly Phe Thr Ser Leu Ala Ser Gln Cys Thr Ala Gln Glu Leu Val Met
 385 390 395 400
 Thr Leu Asn Glu Leu Phe Ala Arg Phe Asp Lys Leu Ala Ala Glu Asn
 405 410 415
 His Cys Leu Arg Ile Lys Ile Leu Gly Asp Cys Tyr Tyr Cys Val Ser

420	425	430
Gly Leu Pro Glu Ala Arg Ala Asp His Ala His Cys Cys Val Glu Met		
435	440	445
Gly Val Asp Met Ile Glu Ala Ile Ser Leu Val Arg Glu Val Thr Gly		
450	455	460
Val Asn Val Asn Met Arg Val Gly Ile His Ser Gly Arg Val His Cys		
465	470	475
Gly Val Leu Gly Leu Arg Lys Trp Gln Phe Asp Val Trp Ser Asn Asp		
485	490	495
Val Thr Leu Ala Asn His Met Glu Ala Gly Gly Gly Arg Arg Ile His		
500	505	510
Ile Thr Arg Ala Thr Leu Gln Tyr Leu Asn Gly Asp Tyr Glu Val Glu		
515	520	525
Pro Gly Arg Gly Gly Glu Arg Asn Ala Tyr Leu Lys Glu Gln Cys Ile		
530	535	540
Glu Thr Phe Leu Ile Leu Gly Ala Ser Gln Lys Arg Lys Glu Glu Lys		
545	550	555
Ala Met Leu Ala Lys Leu Gln Arg Thr Arg Ala Asn Ser Met Glu Gly		
565	570	575
Leu Met Pro Arg Trp Val Pro Asp Arg Ala Phe Ser Arg Thr Lys Asp		
580	585	590
Ser Lys Ala Phe Arg Gln Met Gly Ile Asp Asp Ser Ser Lys Asp Asn		
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Arg Gly Ala Gln Asp Ala Leu Asn Pro Glu Asp Glu Val Asp Glu Phe		
610	615	620
Leu Gly Arg Ala Ile Asp Ala Arg Ser Ile Asp Gln Leu Arg Lys Asp		
625	630	635
His Val Arg Arg Phe Leu Leu Thr Phe Gln Arg Glu Asp Leu Glu Lys		
645	650	655

Lys Tyr Ser Arg Lys Val Asp Pro Arg Phe Gly Ala Tyr Val Ala Cys
 660 665 670
 Ala Leu Leu Val Phe Cys Phe Ile Cys Phe Ile Gln Leu Leu Val Phe
 675 680 685
 Pro Tyr Ser Thr Leu Ile Leu Gly Ile Tyr Ala Ala Ile Phe Leu Leu
 690 695 700
 Leu Leu Val Thr Val Leu Ile Cys Ala Val Cys Ser Cys Gly Ser Phe
 705 710 715 720
 Phe Pro Lys Ala Leu Gln Arg Leu Ser Arg Asn Ile Val Arg Ser Arg
 725 730 735
 Val His Ser Thr Ala Val Gly Ile Phe Ser Val Leu Leu Val Phe Ile
 740 745 750
 Ser Ala Ile Ala Asn Met Phe Thr Cys Asn His Thr Pro Ile Arg Thr
 755 760 765
 Cys Ala Ala Arg Met Leu Asn Leu Thr Pro Ala Asp Val Thr Ala Cys
 770 775 780
 His Leu Gln Gln Leu Asn Tyr Ser Leu Gly Leu Asp Ala Pro Leu Cys
 785 790 795 800
 Glu Gly Thr Ala Pro Thr Cys Ser Phe Pro Glu Tyr Phe Val Gly Asn
 805 810 815
 Val Leu Leu Ser Leu Leu Ala Ser Ser Val Phe Leu His Ile Ser Ser
 820 825 830
 Ile Gly Lys Leu Ala Met Thr Phe Ile Leu Gly Phe Thr Tyr Leu Val
 835 840 845
 Leu Leu Leu Leu Gly Pro Pro Ala Ala Ile Phe Asp Asn Tyr Asp Leu
 850 855 860
 Leu Leu Gly Val His Gly Leu Ala Ser Ser Asn Glu Thr Phe Asp Gly
 865 870 875 880
 Leu Asp Cys Pro Ala Val Gly Arg Val Ala Leu Lys Tyr Met Thr Pro

	885	890	895
Val Ile Leu Leu Val Phe Ala Leu Ala Leu Tyr Leu His Ala Gln Gln			
900	905	910	
Val Glu Ser Thr Ala Arg Leu Asp Phe Leu Trp Lys Leu Gln Ala Thr			
915	920	925	
Gly Glu Lys Glu Glu Met Glu Glu Leu Gln Ala Tyr Asn Arg Arg Leu			
930	935	940	
Leu His Asn Ile Leu Pro Lys Asp Val Ala Ala His Phe Leu Ala Arg			
945	950	955	960
Glu Arg Arg Asn Asp Glu Leu Tyr Tyr Gln Ser Cys Glu Cys Val Ala			
965	970	975	
Val Met Phe Ala Ser Ile Ala Asn Phe Ser Glu Phe Tyr Val Glu Leu			
980	985	990	
Glu Ala Asn Asn Glu Gly Val Glu Cys Leu Arg Leu Leu Asn Glu Ile			
995	1000	1005	
Ile Ala Asp Phe Asp Glu Ile Ile Ser Glu Glu Arg Phe Arg Gln Leu			
1010	1015	1020	
Glu Lys Ile Lys Thr Ile Gly Ser Thr Tyr Met Ala Ala Ser Gly Leu			
1025	1030	1035	1040
Asn Ala Ser Thr Tyr Asp Gln Val Gly Arg Ser His Ile Thr Ala Leu			
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Ala Asp Tyr Ala Met Arg Leu Met Glu Gln Met Lys His Ile Asn Glu			
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His Ser Phe Asn Asn Phe Gln Met Lys Ile Gly Leu Asn Met Gly Pro			
1075	1080	1085	
Val Val Ala Gly Val Ile Gly Ala Arg Lys Pro Gln Tyr Asp Ile Trp			
1090	1095	1100	
Gly Asn Thr Val Asn Val Ser Ser Arg Met Asp Ser Thr Gly Val Pro			
1105	1110	1115	1120

Asp Arg Ile Gln Val Thr Thr Asp Leu Tyr Gln Val Leu Ala Ala Lys
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<210> 718

<211> 428

<212> DNA

<213> Mus musculus

<400> 718

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 gtctcctcca ctggtatacg ggtgagggca tggacgagat ggagttcacc gaagctggga 360
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<211> 465

<212> DNA

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 accctgctgt agaaggctta ggcagctctat aacggctaag ctigtlaatga cttttggtgg 420
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<210> 720

<211> 402

<212> DNA

<213> Mus musculus

<400> 720

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<210> 721

<211> 365

<212> DNA

<213> Mus musculus

<400> 721

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 gtctc 365

<210> 722

<211> 1634

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (45).. (1088)

<400> 722

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Met Asp Glu Gln

1

ccg agg ctg atg cat tcc cac gct ggg gtc ggg atg gcc gga cac ccc 104

Pro Arg Leu Met His Ser His Ala Gly Val Gly Met Ala Gly His Pro

5

10

15

20

ggc ctg tcc cag cac ttg cag gat ggg gcc gga ggg acc gag ggg gag 152

Gly Leu Ser Gln His Leu Gln Asp Gly Ala Gly Gly Thr Glu Gly Glu

25

30

35

ggc ggg agg aag cag gac atc ggg gac att tta cag caa att atg acc 200

Gly Gly Arg Lys Gln Asp Ile Gly Asp Ile Leu Gln Gln Ile Met Thr

40

45

50

atc aca gac cag agt ttg gat gaa gcg cag gcc aga aaa cat gct tta 248
 Ile Thr Asp Gln Ser Leu Asp Glu Ala Gln Ala Arg Lys His Ala Leu
 55 60 65
 aac tgc cac aga atg aag cct gcc ttg ttt aat gtg ttg tgt gaa atc 296
 Asn Cys His Arg Met Lys Pro Ala Leu Phe Asn Val Leu Cys Glu Ile
 70 75 80
 aaa gaa aaa aca gtt ttg agt att cgg gga gcc caa gaa gag gag ccc 344
 Lys Glu Lys Thr Val Leu Ser Ile Arg Gly Ala Gln Glu Glu Glu Pro
 85 90 95 100
 aca gac ccc cag ctc atg cga ctg gac aac atg ctg cta gca gaa ggg 392
 Thr Asp Pro Gln Leu Met Arg Leu Asp Asn Met Leu Leu Ala Glu Gly
 105 110 115
 gtg gcg ggg cct gag aag ggc gga ggc tcg gca gcg gcg gcg gcg gca 440
 Val Ala Gly Pro Glu Lys Gly Gly Gly Ser Ala Ala Ala Ala Ala Ala
 120 125 130
 gcg gca gct tct ggg ggt gca ggt tca gac aac tca gtg gag cat tcc 488
 Ala Ala Ala Ser Gly Gly Ala Gly Ser Asp Asn Ser Val Glu His Ser
 135 140 145
 gac tac aga gcc aaa ctc tca cag atc aga caa atc tac cac aca gag 536
 Asp Tyr Arg Ala Lys Leu Ser Gln Ile Arg Gln Ile Tyr His Thr Glu
 150 155 160
 ctg gag aag tat gag cag gca tgc aat gaa ttc acc acc cac gtg atg 584
 Leu Glu Lys Tyr Glu Gln Ala Cys Asn Glu Phe Thr Thr His Val Met
 165 170 175 180
 aac ctc ctt cga gag caa agc cgg acc agg ccc atc tct ccg aag gag 632
 Asn Leu Leu Arg Glu Gln Ser Arg Thr Arg Pro Ile Ser Pro Lys Glu
 185 190 195
 atc gag cgg atg gtg agc atc atc cac cgc aag ttc agc tcc atc cag 680
 Ile Glu Arg Met Val Ser Ile Ile His Arg Lys Phe Ser Ser Ile Gln

200	205	210	
atg cag ctg aaa cag agc aca tgc gag gcc gtc atg atc ctg cgc tcc			728
Met Gln Leu Lys Gln Ser Thr Cys Glu Ala Val Met Ile Leu Arg Ser			
215	220	225	
cgg ttc ctg gat gcg agg cgg aag aga cgg aat ttc aac aag caa gcc			776
Arg Phe Leu Asp Ala Arg Arg Lys Arg Arg Asn Phe Asn Lys Gln Ala			
230	235	240	
aca gaa att ctg aat gaa tat ttc tat tcc cat ctc agc aac cct tac			824
Thr Glu Ile Leu Asn Glu Tyr Phe Tyr Ser His Leu Ser Asn Pro Tyr			
245	250	255	260
ccc agt gag gaa gcc aaa gag gag tta gcc aag aag tgc ggc atc aca			872
Pro Ser Glu Glu Ala Lys Glu Glu Leu Ala Lys Lys Cys Gly Ile Thr			
265	270	275	
gtc tcc cag gta tca aac tgg ttt gga aat aag cga atc cgg tac aag			920
Val Ser Gln Val Ser Asn Trp Phe Gly Asn Lys Arg Ile Arg Tyr Lys			
280	285	290	
aag aac ata ggt aaa ttt caa gag gaa gcc aat att tat gct gcc aaa			968
Lys Asn Ile Gly Lys Phe Gln Glu Glu Ala Asn Ile Tyr Ala Ala Lys			
295	300	305	
acg gct gtc aca gcc acc aat gtg tca gcc cat gga agc caa gct aac			1016
Thr Ala Val Thr Ala Thr Asn Val Ser Ala His Gly Ser Gln Ala Asn			
310	315	320	
tcg ccc tct act ccc aac tca gcg ggt gga tac cct tcg cca tgt tat			1064
Ser Pro Ser Thr Pro Asn Ser Ala Gly Gly Tyr Pro Ser Pro Cys Tyr			
325	330	335	340
cag cca gac agg agg ata cag tga cggactcgca gccagtcaga tgtacagtc			1118
Gln Pro Asp Arg Arg Ile Gln			
345			
gcagggcatc agtgctaag gaggttggca ggacgctact accccctcat cagtgacctc			1178

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ccctacagaa ggccctggca gtgttcacac tgatacctcc aactgatctc ccagcaatcg 1238
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acgctgaagc ggtcagactg gaggtcgaag caatcagcaa acacaataag agtctccttc 1358
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ttttttcttg ggtagaagcc acccttcctt gccctccagct gtcagactgg ttctgtcat 1478
cttccctggc cctgtctctc tgttatagac gcccggtccc tgccctctat gacttcactg 1538
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<210> 723

<211> 347

<212> PRT

<213> Mus musculus

<400> 723

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Met Asp Glu Gln Pro Arg Leu Met His Ser His Ala Gly Val Gly Met
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Ala Gly His Pro Gly Leu Ser Gln His Leu Gln Asp Gly Ala Gly Gly
      20             25             30
Thr Glu Gly Glu Gly Gly Arg Lys Gln Asp Ile Gly Asp Ile Leu Gln
      35             40             45
Gln Ile Met Thr Ile Thr Asp Gln Ser Leu Asp Glu Ala Gln Ala Arg
      50             55             60
Lys His Ala Leu Asn Cys His Arg Met Lys Pro Ala Leu Phe Asn Val
      65             70             75             80
Leu Cys Glu Ile Lys Glu Lys Thr Val Leu Ser Ile Arg Gly Ala Gln
      85             90             95
Glu Glu Glu Pro Thr Asp Pro Gln Leu Met Arg Leu Asp Asn Met Leu
      100            105            110

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Leu Ala Glu Gly Val Ala Gly Pro Glu Lys Gly Gly Gly Ser Ala Ala
 115 120 125
 Ala Ala Ala Ala Ala Ala Ala Ser Gly Gly Ala Gly Ser Asp Asn Ser
 130 135 140
 Val Glu His Ser Asp Tyr Arg Ala Lys Leu Ser Gln Ile Arg Gln Ile
 145 150 155 160
 Tyr His Thr Glu Leu Glu Lys Tyr Glu Gln Ala Cys Asn Glu Phe Thr
 165 170 175
 Thr His Val Met Asn Leu Leu Arg Glu Gln Ser Arg Thr Arg Pro Ile
 180 185 190
 Ser Pro Lys Glu Ile Glu Arg Met Val Ser Ile Ile His Arg Lys Phe
 195 200 205
 Ser Ser Ile Gln Met Gln Leu Lys Gln Ser Thr Cys Glu Ala Val Met
 210 215 220
 Ile Leu Arg Ser Arg Phe Leu Asp Ala Arg Arg Lys Arg Arg Asn Phe
 225 230 235 240
 Asn Lys Gln Ala Thr Glu Ile Leu Asn Glu Tyr Phe Tyr Ser His Leu
 245 250 255
 Ser Asn Pro Tyr Pro Ser Glu Glu Ala Lys Glu Glu Leu Ala Lys Lys
 260 265 270
 Cys Gly Ile Thr Val Ser Gln Val Ser Asn Trp Phe Gly Asn Lys Arg
 275 280 285
 Ile Arg Tyr Lys Lys Asn Ile Gly Lys Phe Gln Glu Glu Ala Asn Ile
 290 295 300
 Tyr Ala Ala Lys Thr Ala Val Thr Ala Thr Asn Val Ser Ala His Gly
 305 310 315 320
 Ser Gln Ala Asn Ser Pro Ser Thr Pro Asn Ser Ala Gly Gly Tyr Pro
 325 330 335
 Ser Pro Cys Tyr Gln Pro Asp Arg Arg Ile Gln

340

345

<210> 724

<211> 445

<212> DNA

<213> Mus musculus

<400> 724

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 aacaagaaaa atatgttcca agtgatacat acagagaaaa cgctgtacat ccaagcaaac 120
 aactgtgtgg aagccaatga gtggatagat gtcctgtgca gggtagagcag atgcaaccac 180
 aacaggctca gctctttcca cccctcagcg tatctcaacg gaaactggct ctgctgccag 240
 gagacgagtg aaagcacacc aggctgcaac gtingcacgc agcatccctg cagacatcca 300
 gatagataic gatgaagaca gagaaacaga aagaatttat tctatittta ccctcagttt 360
 acttaagctg cagaaaatgg aagagacctg tgggtctata gctgtgtatc aggggccaca 420
 gaaagaacct ggttattcta agttc 445

<210> 725

<211> 382

<212> DNA

<213> Mus musculus

<400> 725

ggcacgagcg gcacgagcca aggctgacac gctgaccctg gaggagaggg tctacttcaa 60
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 tgatgaggac gcagaagacc ggctggtgaa cgaaaagttc cgggagatga tccatttgc 180
 tgttggtgggc agcgaccaitg agtatcaagt caatggcaag aggattcttg gaaggaagac 240
 caagtggggc actatcgaag ttgagaatac cactcactgt gaatttgctt acctgcggga 300
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agcctaaccga gtgaagcgcc tc

382

<210> 726

<211> 2215

<212> DNA

<213> *Mus musculus*

<220>

<221> CDS

<222> (704).. (1396)

<400> 726

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 gcaagctcgt taattttctca cgTtagtcca tcctaaacat taggtacatt acagggcaaa 180
 agaactcatc agtatgttct ttgtatctta atacttgTtg tgacagaaTg atcaaagaaa 240
 aagcgatata tttttaagga gtgtgaaagt gcagtctcta acattcacia acttgagggg 300
 ttttgcttga cagtatctag gtTcatggga tggcttcaaa gttagattagt tgggctggac 360
 tagggaggTc ctgaaggagg agggataaat attttcttac acacgttaaa tattaaaatc 420
 tttgttacaa gcacattttg gtcagtggct tttagctctt acactttaag ttttgactTc 480
 tgtatctgtc tgtctctgtc tgtctctgtc tgtctgtctg tctttgtctg tctgtctgtt 540
 tctcttttga tcacatctct gtctttttgg ttgcaatcat aattcttcca ttatgttcag 600
 catttcagat ctTgatTTTT agTgttcagc cctacagcca catgatctct taaactctga 660
 agaagagaca agTTTTggga ctggTgacaa ttgtctagag agc atg gag ggc cat 715

Met Glu Gly His

1.

gtc aag cgc ccc atg aat gca ttt atg gtg tgg tcc cgt ggt gag agg 763
 Val Lys Arg Pro Met Asn Ala Phe Met Val Trp Ser Arg Gly Glu Arg

5

10

15

20

cac aag ttg gcc cag cag aat ccc agc atg caa aat aca gag atc agc 811
 His Lys Leu Ala Gln Gln Asn Pro Ser Met Gln Asn Thr Glu Ile Ser
 25 30 35
 aag cag ctg gga tgc agg tgg aaa agc ctt aca gaa gcc gaa aaa agg 859
 Lys Gln Leu Gly Cys Arg Trp Lys Ser Leu Thr Glu Ala Glu Lys Arg
 40 45 50
 ccc ttt ttc cag gag gca cag aga ttg aag acc cta cac aga gag aaa 907
 Pro Phe Phe Gln Glu Ala Gln Arg Leu Lys Thr Leu His Arg Glu Lys
 55 60 65
 tac cca aac tat aaa tat cag cct cat cgg agg gct aaa gtg tca cag 955
 Tyr Pro Asn Tyr Lys Tyr Gln Pro His Arg Arg Ala Lys Val Ser Gln
 70 75 80
 agg agt ggc att tta cag cct gca gtt gcc tca aca aaa ctg tac aac 1003
 Arg Ser Gly Ile Leu Gln Pro Ala Val Ala Ser Thr Lys Leu Tyr Asn
 85 90 95 100
 ctt ctg cag tgg gac agg aac cca cat gcc atc aca tac agg caa gac 1051
 Leu Leu Gln Trp Asp Arg Asn Pro His Ala Ile Thr Tyr Arg Gln Asp
 105 110 115
 tgg agt aga gct gca cac ctg tac tcc aaa aac cag caa agc ttt tat 1099
 Trp Ser Arg Ala Ala His Leu Tyr Ser Lys Asn Gln Gln Ser Phe Tyr
 120 125 130
 ttg cag cct gtc gat atc ccc act ggg cac ccg cag cag cag cag cag 1147
 Leu Gln Pro Val Asp Ile Pro Thr Gly His Pro Gln Gln Gln Gln Gln
 135 140 145
 cag cag cag cag ttc cat aac cac cac cag cag caa cag cag ttc tat 1195
 Gln Gln Gln Gln Phe His Asn His His Gln Gln Gln Gln Gln Phe Tyr
 150 155 160
 gac cac cag cag cag cag cag cag cag cag cag cag cag ttc cat gac 1243
 Asp His Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe His Asp

165 170 175 180
 cac cac cag cag aag cag cag ttt cat gac cac cac cag cag caa cag 1291
 His His Gln Gln Lys Gln Gln Phe His Asp His His Gln Gln Gln Gln
 185 190 195
 cag ttc cat gac cac cac cac cac cag cag cag cag cag ttc cat gac 1339
 Gln Phe His Asp His His His His Gln Gln Gln Gln Gln Phe His Asp
 200 205 210
 cac cac cag cag caa cag cag ttc cat gac cac cag cag cag cag cag 1387
 His His Gln Gln Gln Gln Gln Phe His Asp His Gln Gln Gln Gln Gln
 215 220 225
 cag cag tag cagcagcagt tccatgacca ccaccagcag aagcagcagt 1436
 Gln Gln
 230
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 gtttttgttt aacatagtac tagttgcatt gttgtggcat ttaatccaca gaagaaacca 2156
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<210> 727

<211> 230

<212> PRT

<213> Mus musculus

<400> 727

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      20             25             30
Thr Glu Ile Ser Lys Gln Leu Gly Cys Arg Trp Lys Ser Leu Thr Glu
      35             40             45
Ala Glu Lys Arg Pro Phe Phe Gln Glu Ala Gln Arg Leu Lys Thr Leu
      50             55             60
His Arg Glu Lys Tyr Pro Asn Tyr Lys Tyr Gln Pro His Arg Arg Ala
      65             70             75             80
Lys Val Ser Gln Arg Ser Gly Ile Leu Gln Pro Ala Val Ala Ser Thr
      85             90             95
Lys Leu Tyr Asn Leu Leu Gln Trp Asp Arg Asn Pro His Ala Ile Thr
      100            105            110
Tyr Arg Gln Asp Trp Ser Arg Ala Ala His Leu Tyr Ser Lys Asn Gln
      115            120            125
Gln Ser Phe Tyr Leu Gln Pro Val Asp Ile Pro Thr Gly His Pro Gln
      130            135            140
Gln Gln Gln Gln Gln Gln Gln Gln Phe His Asn His His Gln Gln Gln
      145            150            155            160
Gln Gln Phe Tyr Asp His Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
      165            170            175
Gln Phe His Asp His His Gln Gln Lys Gln Gln Phe His Asp His His
      180            185            190
Gln Gln Gln Gln Gln Phe His Asp His His His His Gln Gln Gln Gln

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195 200 205
 Gln Phe His Asp His His Gln Gln Gln Gln Gln Phe His Asp His Gln
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 Gln Gln Gln Gln Gln Gln
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<210> 728

<211> 2166

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (13).. (1707)

<400> 728

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 1 5 10
 gtc tcg gcc ccc gcg ttt tac gcc ccg cag aag aag ttc gcc ccg gtt 99
 Val Ser Ala Pro Ala Phe Tyr Ala Pro Gln Lys Lys Phe Ala Pro Val
 15 20 25
 gtg gcc cca aag ccc aaa gtg aat cct ttc cgg cct ggg gac agc gag 147
 Val Ala Pro Lys Pro Lys Val Asn Pro Phe Arg Pro Gly Asp Ser Glu
 30 35 40 45
 cct cct gta gca gcc ggg gcc caa aga gcg cag atg ggt cgg gtg ggc 195
 Pro Pro Val Ala Ala Gly Ala Gln Arg Ala Gln Met Gly Arg Val Gly
 50 55 60
 gag atc cca cca cca ccc ccg gaa gac ttt cct ttg ccc cct cct ccc 243

Glu Ile Pro Pro Pro Pro Pro Glu Asp Phe Pro Leu Pro Pro Pro Pro
 65 70 75
 ctt att ggg gag ggc gac gac tca gag ggt gcc ctg gga ggt gcc ttc 291
 Leu Ile Gly Glu Gly Asp Asp Ser Glu Gly Ala Leu Gly Gly Ala Phe
 80 85 90
 cca cct cca cct ccc ccg atg atc gag gaa cca ttc ccc cct gct cct 339
 Pro Pro Pro Pro Pro Pro Met Ile Glu Glu Pro Phe Pro Pro Ala Pro
 95 100 105
 ctg gag gag gac atc ttc ccc tcc cct cca cct cca ctg gag gag gag 387
 Leu Glu Glu Asp Ile Phe Pro Ser Pro Pro Pro Pro Leu Glu Glu Glu
 110 115 120 125
 gga ggg cct gag gcc cct acc cag ctc cca ccg cag ccc agg gag aaa 435
 Gly Gly Pro Glu Ala Pro Thr Gln Leu Pro Pro Gln Pro Arg Glu Lys
 130 135 140
 gtg tgc agt att gac ctg gag att gac tct ctg tcc tca ctg ctg gac 483
 Val Cys Ser Ile Asp Leu Glu Ile Asp Ser Leu Ser Ser Leu Leu Asp
 145 150 155
 gac atg acc aag aac gat ccc ttc aaa gcc cgg gta tca tcc gga tat 531
 Asp Met Thr Lys Asn Asp Pro Phe Lys Ala Arg Val Ser Ser Gly Tyr
 160 165 170
 gta ccc cca cca gtt gcc act cca ttt gtt ccc aag cct agt acc aaa 579
 Val Pro Pro Pro Val Ala Thr Pro Phe Val Pro Lys Pro Ser Thr Lys
 175 180 185
 cct gcc cct ggg ggc aca gca ccc ttg cct cct tgg aag acc cct tct 627
 Pro Ala Pro Gly Gly Thr Ala Pro Leu Pro Pro Trp Lys Thr Pro Ser
 190 195 200 205
 agc tcc cag cca cca cct cag ccg cag gcc aag cct cag gtc cag ctc 675
 Ser Ser Gln Pro Pro Pro Gln Pro Gln Ala Lys Pro Gln Val Gln Leu
 210 215 220

cat gtc cag cct cag gcc aag ccc cat gtc caa ccc cag cct gtg tct 723
 His Val Gln Pro Gln Ala Lys Pro His Val Gln Pro Gln Pro Val Ser
 225 230 235
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 Ser Ala Asn Thr Gln Pro Arg Gly Pro Leu Ser Gln Ala Pro Thr Pro
 240 245 250
 gca cct aag ttt gct cca gtg gct cct aaa ttt act ccc gtg gtt tcc 819
 Ala Pro Lys Phe Ala Pro Val Ala Pro Lys Phe Thr Pro Val Val Ser
 255 260 265
 aag ttc agc cct ggt gct cca agt gga cct ggg cca cag ccc aat caa 867
 Lys Phe Ser Pro Gly Ala Pro Ser Gly Pro Gly Pro Gln Pro Asn Gln
 270 275 280 285
 aaa atg gtg cct ccg gat gct cct tct tct gtg agc aca ggc tcc cct 915
 Lys Met Val Pro Pro Asp Ala Pro Ser Ser Val Ser Thr Gly Ser Pro
 290 295 300
 cag ccc cct agc ttc acc tat gct cag cag aag gag aag ccc cta gtt 963
 Gln Pro Pro Ser Phe Thr Tyr Ala Gln Gln Lys Glu Lys Pro Leu Val
 305 310 315
 caa gag aag cag cac cca cag cct cca cca gct caa aac caa aac cag 1011
 Gln Glu Lys Gln His Pro Gln Pro Pro Pro Ala Gln Asn Gln Asn Gln
 320 325 330
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 Val Arg Ser Pro Gly Gly Pro Gly Pro Leu Thr Leu Lys Glu Val Glu
 335 340 345
 gag ttg gag cag ctg acc cag cag ctg atg cag gac atg gaa cac cct 1107
 Glu Leu Glu Gln Leu Thr Gln Gln Leu Met Gln Asp Met Glu His Pro
 350 355 360 365
 cag agg cag agc gtg gca gtg aat gag tcc tgt ggc aaa tgc aat cag 1155
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370	375	380	
cca ctg gcc cgt gca cag cct gcg gtt cgt gca ctg gga caa ctg ttc	1203		
Pro Leu Ala Arg Ala Gln Pro Ala Val Arg Ala Leu Gly Gln Leu Phe			
385	390	395	
cac atc acc tgc ttc act tgc cat cag tgt cag cag cag ctg cag gga	1251		
His Ile Thr Cys Phe Thr Cys His Gln Cys Gln Gln Gln Leu Gln Gly			
400	405	410	
cag cag ttc tat agc ctg gag gga gca cca tat tgt gag ggc tgc tac	1299		
Gln Gln Phe Tyr Ser Leu Glu Gly Ala Pro Tyr Cys Glu Gly Cys Tyr			
415	420	425	
acc gac act ttg gag aag tgc aac acc tgt ggg cag ccc atc act gac	1347		
Thr Asp Thr Leu Glu Lys Cys Asn Thr Cys Gly Gln Pro Ile Thr Asp			
430	435	440	445
cgc atg ctg agg gcc act ggc aaa gcc tac cac cca cag tgc ttc acc	1395		
Arg Met Leu Arg Ala Thr Gly Lys Ala Tyr His Pro Gln Cys Phe Thr			
450	455	460	
tgt gtg gtc tgc gcc tgt ccc ctg gag ggc acc tcc ttc att gtg gac	1443		
Cys Val Val Cys Ala Cys Pro Leu Glu Gly Thr Ser Phe Ile Val Asp			
465	470	475	
cag gcc aat cag ccc cac tgt gtc cct gac tat cac aag caa tac gct	1491		
Gln Ala Asn Gln Pro His Cys Val Pro Asp Tyr His Lys Gln Tyr Ala			
480	485	490	
cca agg tgc tcc gtc tgc tgc gag cca atc atg cct gag cct ggc cga	1539		
Pro Arg Cys Ser Val Cys Ser Glu Pro Ile Met Pro Glu Pro Gly Arg			
495	500	505	
gac gag act gtg cga gta gtg gcg ctg gat aag aac ttt cat atg aag	1587		
Asp Glu Thr Val Arg Val Val Ala Leu Asp Lys Asn Phe His Met Lys			
510	515	520	525
tgt tac aag tgt gag gac tgt ggg aaa cct ctg tcc att gag gca gat	1635		

Cys Tyr Lys Cys Glu Asp Cys Gly Lys Pro Leu Ser Ile Glu Ala Asp
 530 535 540
 gac aac ggc tgt ttc cct ctg gat ggc cac gtc ctt tgt cgg aag tgc 1683
 Asp Asn Gly Cys Phe Pro Leu Asp Gly His Val Leu Cys Arg Lys Cys
 545 550 555
 cac tcc gct aga gcc cag acc tga gttagatgg acctccttcc agaccacagg 1737
 His Ser Ala Arg Ala Gln Thr
 560 565
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 aaaaaaaaaa 2166

<210> 729

<211> 564

<212> PRT

<213> Mus musculus

<400> 729

Met Ala Ala Pro Arg Pro Pro Pro Ala Ile Ser Val Ser Val Ser Ala
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 Pro Ala Phe Tyr Ala Pro Gln Lys Lys Phe Ala Pro Val Val Ala Pro
 20 25 30
 Lys Pro Lys Val Asn Pro Phe Arg Pro Gly Asp Ser Glu Pro Pro Val
 35 40 45

Ala Ala Gly Ala Gln Arg Ala Gln Met Gly Arg Val Gly Glu Ile Pro
 50 55 60
 Pro Pro Pro Pro Glu Asp Phe Pro Leu Pro Pro Pro Pro Leu Ile Gly
 65 70 75 80
 Glu Gly Asp Asp Ser Glu Gly Ala Leu Gly Gly Ala Phe Pro Pro Pro
 85 90 95
 Pro Pro Pro Met Ile Glu Glu Pro Phe Pro Pro Ala Pro Leu Glu Glu
 100 105 110
 Asp Ile Phe Pro Ser Pro Pro Pro Pro Leu Glu Glu Glu Gly Gly Pro
 115 120 125
 Glu Ala Pro Thr Gln Leu Pro Pro Gln Pro Arg Glu Lys Val Cys Ser
 130 135 140
 Ile Asp Leu Glu Ile Asp Ser Leu Ser Ser Leu Leu Asp Asp Met Thr
 145 150 155 160
 Lys Asn Asp Pro Phe Lys Ala Arg Val Ser Ser Gly Tyr Val Pro Pro
 165 170 175
 Pro Val Ala Thr Pro Phe Val Pro Lys Pro Ser Thr Lys Pro Ala Pro
 180 185 190
 Gly Gly Thr Ala Pro Leu Pro Pro Trp Lys Thr Pro Ser Ser Ser Gln
 195 200 205
 Pro Pro Pro Gln Pro Gln Ala Lys Pro Gln Val Gln Leu His Val Gln
 210 215 220
 Pro Gln Ala Lys Pro His Val Gln Pro Gln Pro Val Ser Ser Ala Asn
 225 230 235 240
 Thr Gln Pro Arg Gly Pro Leu Ser Gln Ala Pro Thr Pro Ala Pro Lys
 245 250 255
 Phe Ala Pro Val Ala Pro Lys Phe Thr Pro Val Val Ser Lys Phe Ser
 260 265 270
 Pro Gly Ala Pro Ser Gly Pro Gly Pro Gln Pro Asn Gln Lys Met Val

275	280	285
Pro Pro Asp Ala Pro Ser Ser Val Ser Thr Gly Ser Pro Gln Pro Pro		
290	295	300
Ser Phe Thr Tyr Ala Gln Gln Lys Glu Lys Pro Leu Val Gln Glu Lys		
305	310	315
Gln His Pro Gln Pro Pro Pro Ala Gln Asn Gln Asn Gln Val Arg Ser		
325	330	335
Pro Gly Gly Pro Gly Pro Leu Thr Leu Lys Glu Val Glu Glu Leu Glu		
340	345	350
Gln Leu Thr Gln Gln Leu Met Gln Asp Met Glu His Pro Gln Arg Gln		
355	360	365
Ser Val Ala Val Asn Glu Ser Cys Gly Lys Cys Asn Gln Pro Leu Ala		
370	375	380
Arg Ala Gln Pro Ala Val Arg Ala Leu Gly Gln Leu Phe His Ile Thr		
385	390	395
Cys Phe Thr Cys His Gln Cys Gln Gln Gln Leu Gln Gly Gln Gln Phe		
405	410	415
Tyr Ser Leu Glu Gly Ala Pro Tyr Cys Glu Gly Cys Tyr Thr Asp Thr		
420	425	430
Leu Glu Lys Cys Asn Thr Cys Gly Gln Pro Ile Thr Asp Arg Met Leu		
435	440	445
Arg Ala Thr Gly Lys Ala Tyr His Pro Gln Cys Phe Thr Cys Val Val		
450	455	460
Cys Ala Cys Pro Leu Glu Gly Thr Ser Phe Ile Val Asp Gln Ala Asn		
465	470	475
Gln Pro His Cys Val Pro Asp Tyr His Lys Gln Tyr Ala Pro Arg Cys		
485	490	495
Ser Val Cys Ser Glu Pro Ile Met Pro Glu Pro Gly Arg Asp Glu Thr		
500	505	510

Val Arg Val Val Ala Leu Asp Lys Asn Phe His Met Lys Cys Tyr Lys
 515 520 525
 Cys Glu Asp Cys Gly Lys Pro Leu Ser Ile Glu Ala Asp Asp Asn Gly
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 Cys Phe Pro Leu Asp Gly His Val Leu Cys Arg Lys Cys His Ser Ala
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 Arg Ala Gln Thr

<210> 730

<211> 2457

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (53).. (2089)

<400> 730

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Met Gly

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Asp Ser His Glu Asp Thr Ser Ala Thr Val Pro Glu Ala Val Ala Glu

5

10

15

gaa gtg tct cta ttc agc aca acg gac att gtt ctg ttt tct ctc atc 154

Glu Val Ser Leu Phe Ser Thr Thr Asp Ile Val Leu Phe Ser Leu Ile

20

25

30

gtg ggg gtc ctg acc tac tgg ttc atc ttt aaa aag aag aaa gaa gag 202

Val Gly Val Leu Thr Tyr Trp Phe Ile Phe Lys Lys Lys Lys Glu Glu

35	40	45	50	
ata ccg gag ttc agc aag atc cag aca acg gcc cca cct gtc aaa gag				250
Ile Pro Glu Phe Ser Lys Ile Gln Thr Thr Ala Pro Pro Val Lys Glu				
55	60	65		
agc agc ttc gtg gaa aag atg aag aaa acg gga agg aac att att gta				298
Ser Ser Phe Val Glu Lys Met Lys Lys Thr Gly Arg Asn Ile Ile Val				
70	75	80		
ttc tat ggc tcc cag acg gga acc gcg gag gag ttt gcc aac cgg ctg				346
Phe Tyr Gly Ser Gln Thr Gly Thr Ala Glu Glu Phe Ala Asn Arg Leu				
85	90	95		
tcc aag gat gcc cac cgc tat ggg atg cgg ggc atg tct gca gac cct				394
Ser Lys Asp Ala His Arg Tyr Gly Met Arg Gly Met Ser Ala Asp Pro				
100	105	110		
gaa gag tat gac ttg gcc gac ctg agc agc ctg cct gag atc gac aag				442
Glu Glu Tyr Asp Leu Ala Asp Leu Ser Ser Leu Pro Glu Ile Asp Lys				
115	120	125	130	
tcc ctg gta gtc ttc tgc atg gcc aca tac gga gaa ggc gac ccc acc				490
Ser Leu Val Val Phe Cys Met Ala Thr Tyr Gly Glu Gly Asp Pro Thr				
135	140	145		
gac aac gcg cag gac ttc tat gat tgg ctg cag gag act gac gtg gac				538
Asp Asn Ala Gln Asp Phe Tyr Asp Trp Leu Gln Glu Thr Asp Val Asp				
150	155	160		
ctc acg ggt gtc aag ttt gct gtg ttt ggt ctc ggg aac aag acc tat				586
Leu Thr Gly Val Lys Phe Ala Val Phe Gly Leu Gly Asn Lys Thr Tyr				
165	170	175		
gag cac ttc aac gcc atg ggc aag tat gtg gac cag cgg ctg gag cag				634
Glu His Phe Asn Ala Met Gly Lys Tyr Val Asp Gln Arg Leu Glu Gln				
180	185	190		
ctt ggc gcc cag cga atc ttt gag ttg ggc ctt ggt gat gac gac ggg				682

Leu Gly Ala Gln Arg Ile Phe Glu Leu Gly Leu Gly Asp Asp Asp Gly
 195 200 205 210
 aac ttg gaa gag gat ttc atc aca tgg agg gag cag ttc tgg cca gct 730
 Asn Leu Glu Glu Asp Phe Ile Thr Trp Arg Glu Gln Phe Trp Pro Ala
 215 220 225
 gtg tgc gag ttc ttc ggg gtg gaa gcc act ggg gag gag tcg agc atc 778
 Val Cys Glu Phe Phe Gly Val Glu Ala Thr Gly Glu Glu Ser Ser Ile
 230 235 240
 cgc cag tac gag ctc gtg gtc cac gaa gac atg gac aca gcc aag gtg 826
 Arg Gln Tyr Glu Leu Val Val His Glu Asp Met Asp Thr Ala Lys Val
 245 250 255
 tac acg ggt gag atg ggc cgt ctg aag agc tac gag aac cag aaa ccc 874
 Tyr Thr Gly Glu Met Gly Arg Leu Lys Ser Tyr Glu Asn Gln Lys Pro
 260 265 270
 ccc ttc gat gcc aag aat cca ttc ctg gct gct gtc acc acg aac cgg 922
 Pro Phe Asp Ala Lys Asn Pro Phe Leu Ala Ala Val Thr Thr Asn Arg
 275 280 285 290
 aag ctg aac caa ggc act gag agg cat cta atg cac ctg gaa ttg gac 970
 Lys Leu Asn Gln Gly Thr Glu Arg His Leu Met His Leu Glu Leu Asp
 295 300 305
 atc tca gac tcc aag atc agg tat gaa tct gga gat cac gtg gct gtg 1018
 Ile Ser Asp Ser Lys Ile Arg Tyr Glu Ser Gly Asp His Val Ala Val
 310 315 320
 tac cca gcc aac gac tcc acc ctg gtc aac cag att ggg gag atc ctg 1066
 Tyr Pro Ala Asn Asp Ser Thr Leu Val Asn Gln Ile Gly Glu Ile Leu
 325 330 335
 ggg gct gac ctg gat gtc atc atg tct cta aac aat ctc gat gag gag 1114
 Gly Ala Asp Leu Asp Val Ile Met Ser Leu Asn Asn Leu Asp Glu Glu
 340 345 350

tcg aat aag aag cat ccg ttc ccc tgc ccc acc acc tac cgc acg gcc 1162
 Ser Asn Lys Lys His Pro Phe Pro Cys Pro Thr Thr Tyr Arg Thr Ala
 355 360 365 370
 ctc acc tac tac ctg gac atc act aac ccg cca cga acc aac gtg ctc 1210
 Leu Thr Tyr Tyr Leu Asp Ile Thr Asn Pro Pro Arg Thr Asn Val Leu
 375 380 385
 tac gag ctg gcc cag tac gcc tca gag ccc tcg gag cag gaa cac ctg 1258
 Tyr Glu Leu Ala Gln Tyr Ala Ser Glu Pro Ser Glu Gln Glu His Leu
 390 395 400
 cac aag atg gcg tcc tcc tcc ggc gag ggc aag gag ctg tac ctg agc 1306
 His Lys Met Ala Ser Ser Ser Gly Glu Gly Lys Glu Leu Tyr Leu Ser
 405 410 415
 tgg gtg gtg gag gcc cgg agg cac atc cta gcc att ctc caa gac tac 1354
 Trp Val Val Glu Ala Arg Arg His Ile Leu Ala Ile Leu Gln Asp Tyr
 420 425 430
 ccg tcc ctg cgg cca ccc atc gac cac ctg tgc gag ctc ctc ccg agg 1402
 Pro Ser Leu Arg Pro Pro Ile Asp His Leu Cys Glu Leu Leu Pro Arg
 435 440 445 450
 ctg cag gcc cgc tac tat tcc att gcc tcg tcg tct aag gtc cac ccc 1450
 Leu Gln Ala Arg Tyr Tyr Ser Ile Ala Ser Ser Ser Lys Val His Pro
 455 460 465
 aac tcc gtg cac atc tgc gcc gtg gct gtg gag tat gaa gcg aag tct 1498
 Asn Ser Val His Ile Cys Ala Val Ala Val Glu Tyr Glu Ala Lys Ser
 470 475 480
 gga cga gtg aac aag ggg gtg gcc acc agc tgg ctt cgg acc aag gaa 1546
 Gly Arg Val Asn Lys Gly Val Ala Thr Ser Trp Leu Arg Thr Lys Glu
 485 490 495
 cca gca gga gag aat ggc cgc cgg gcc ctg gtc ccc atg ttc gtc cgc 1594
 Pro Ala Gly Glu Asn Gly Arg Arg Ala Leu Val Pro Met Phe Val Arg

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aag tcc cag ttc cgc ttg cct ttc aag ccc acc aca cct gtt atc atg			1642
Lys Ser Gln Phe Arg Leu Pro Phe Lys Pro Thr Thr Pro Val Ile Met			
515	520	525	530
gtg ggc ccc ggc act ggg gtt gcc cct ttc atg ggc ttc atc cag gag			1690
Val Gly Pro Gly Thr Gly Val Ala Pro Phe Met Gly Phe Ile Gln Glu			
535	540	545	
cgg gct tgg ctt cga gag caa ggc aag gag gtc gga gag acg ctg ctc			1738
Arg Ala Trp Leu Arg Glu Gln Gly Lys Glu Val Gly Glu Thr Leu Leu			
550	555	560	
tac tac ggc tgc cgg cgc tcg gat gag gac tat ctg tac cgc gag gag			1786
Tyr Tyr Gly Cys Arg Arg Ser Asp Glu Asp Tyr Leu Tyr Arg Glu Glu			
565	570	575	
ctg gcg cgc ttc cac aag gac ggc gcc ctc acg cag ctt aat gtg gcc			1834
Leu Ala Arg Phe His Lys Asp Gly Ala Leu Thr Gln Leu Asn Val Ala			
580	585	590	
ttt tcc cgt gag cag gcc cac aag gtc tat gtt cag cac ctg ctc aag			1882
Phe Ser Arg Glu Gln Ala His Lys Val Tyr Val Gln His Leu Leu Lys			
595	600	605	610
agg gac aaa gag cac ctg tgg aag ctg atc cac gaa ggt ggt gcc cac			1930
Arg Asp Lys Glu His Leu Trp Lys Leu Ile His Glu Gly Gly Ala His			
615	620	625	
atc tat gtc tgc ggg gat gct cga aat atg gcc aaa gat gtg cag aac			1978
Ile Tyr Val Cys Gly Asp Ala Arg Asn Met Ala Lys Asp Val Gln Asn			
630	635	640	
aca ttc tat gac atc gtg gcc gag ttt ggg ccc atg gag cac acc cag			2026
Thr Phe Tyr Asp Ile Val Ala Glu Phe Gly Pro Met Glu His Thr Gln			
645	650	655	
gct gtg gac tat gtt aag aag ctc atg acc aag ggc cgc tac tcg ctg			2074

Ala Val Asp Tyr Val Lys Lys Leu Met Thr Lys Gly Arg Tyr Ser Leu

660

665

670

gat gta tgg agc tag gagctgccgc cccccacccc tcgctccctg taatcacgtc 2129

Asp Val Trp Ser

675

cttaacttcc ttctgccgac ctccacctct ggiggttccct gccctgcctg gacacaggga 2189

ggcccaggga ctgactcctg gcctgagtga tgccttccig ggcccttagg cagagccctgg 2249

tccatigtac caggcagcct agcccagccc agggcacatg gcaagaggga ctggaccac 2309

ctttgggtga tgggtgccctt aggtccccag cagctgtaca gaaggggctc ttctctccac 2369

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tggcccttgg aataaagttg tttictgt 2457

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<211> 678

<212> PRT

<213> Mus musculus

<400> 731

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Ala Glu Glu Val Ser Leu Phe Ser Thr Thr Asp Ile Val Leu Phe Ser

20

25

30

Leu Ile Val Gly Val Leu Thr Tyr Trp Phe Ile Phe Lys Lys Lys Lys

35

40

45

Glu Glu Ile Pro Glu Phe Ser Lys Ile Gln Thr Thr Ala Pro Pro Val

50

55

60

Lys Glu Ser Ser Phe Val Glu Lys Met Lys Lys Thr Gly Arg Asn Ile

65

70

75

80

Ile Val Phe Tyr Gly Ser Gln Thr Gly Thr Ala Glu Glu Phe Ala Asn

	85		90		95
Arg Leu Ser Lys Asp Ala His Arg Tyr Gly Met Arg Gly Met Ser Ala					
	100		105		110
Asp Pro Glu Glu Tyr Asp Leu Ala Asp Leu Ser Ser Leu Pro Glu Ile					
	115		120		125
Asp Lys Ser Leu Val Val Phe Cys Met Ala Thr Tyr Gly Glu Gly Asp					
	130		135		140
Pro Thr Asp Asn Ala Gln Asp Phe Tyr Asp Trp Leu Gln Glu Thr Asp					
145		150		155	160
Val Asp Leu Thr Gly Val Lys Phe Ala Val Phe Gly Leu Gly Asn Lys					
	165		170		175
Thr Tyr Glu His Phe Asn Ala Met Gly Lys Tyr Val Asp Gln Arg Leu					
	180		185		190
Glu Gln Leu Gly Ala Gln Arg Ile Phe Glu Leu Gly Leu Gly Asp Asp					
	195		200		205
Asp Gly Asn Leu Glu Glu Asp Phe Ile Thr Trp Arg Glu Gln Phe Trp					
	210		215		220
Pro Ala Val Cys Glu Phe Phe Gly Val Glu Ala Thr Gly Glu Glu Ser					
225		230		235	240
Ser Ile Arg Gln Tyr Glu Leu Val Val His Glu Asp Met Asp Thr Ala					
	245		250		255
Lys Val Tyr Thr Gly Glu Met Gly Arg Leu Lys Ser Tyr Glu Asn Gln					
	260		265		270
Lys Pro Pro Phe Asp Ala Lys Asn Pro Phe Leu Ala Ala Val Thr Thr					
	275		280		285
Asn Arg Lys Leu Asn Gln Gly Thr Glu Arg His Leu Met His Leu Glu					
	290		295		300
Leu Asp Ile Ser Asp Ser Lys Ile Arg Tyr Glu Ser Gly Asp His Val					
305		310		315	320

Ala Val Tyr Pro Ala Asn Asp Ser Thr Leu Val Asn Gln Ile Gly Glu
325 330 335

Ile Leu Gly Ala Asp Leu Asp Val Ile Met Ser Leu Asn Asn Leu Asp
340 345 350

Glu Glu Ser Asn Lys Lys His Pro Phe Pro Cys Pro Thr Thr Tyr Arg
355 360 365

Thr Ala Leu Thr Tyr Tyr Leu Asp Ile Thr Asn Pro Pro Arg Thr Asn
370 375 380

Val Leu Tyr Glu Leu Ala Gln Tyr Ala Ser Glu Pro Ser Glu Gln Glu
385 390 395 400

His Leu His Lys Met Ala Ser Ser Ser Gly Glu Gly Lys Glu Leu Tyr
405 410 415

Leu Ser Trp Val Val Glu Ala Arg Arg His Ile Leu Ala Ile Leu Gln
420 425 430

Asp Tyr Pro Ser Leu Arg Pro Pro Ile Asp His Leu Cys Glu Leu Leu
435 440 445

Pro Arg Leu Gln Ala Arg Tyr Tyr Ser Ile Ala Ser Ser Ser Lys Val
450 455 460

His Pro Asn Ser Val His Ile Cys Ala Val Ala Val Glu Tyr Glu Ala
465 470 475 480

Lys Ser Gly Arg Val Asn Lys Gly Val Ala Thr Ser Trp Leu Arg Thr
485 490 495

Lys Glu Pro Ala Gly Glu Asn Gly Arg Arg Ala Leu Val Pro Met Phe
500 505 510

Val Arg Lys Ser Gln Phe Arg Leu Pro Phe Lys Pro Thr Thr Pro Val
515 520 525

Ile Met Val Gly Pro Gly Thr Gly Val Ala Pro Phe Met Gly Phe Ile
530 535 540

Gln Glu Arg Ala Trp Leu Arg Glu Gln Gly Lys Glu Val Gly Glu Thr

545 550 555 560
 Leu Leu Tyr Tyr Gly Cys Arg Arg Ser Asp Glu Asp Tyr Leu Tyr Arg
 565 570 575
 Glu Glu Leu Ala Arg Phe His Lys Asp Gly Ala Leu Thr Gln Leu Asn
 580 585 590
 Val Ala Phe Ser Arg Glu Gln Ala His Lys Val Tyr Val Gln His Leu
 595 600 605
 Leu Lys Arg Asp Lys Glu His Leu Trp Lys Leu Ile His Glu Gly Gly
 610 615 620
 Ala His Ile Tyr Val Cys Gly Asp Ala Arg Asn Met Ala Lys Asp Val
 625 630 635 640
 Gln Asn Thr Phe Tyr Asp Ile Val Ala Glu Phe Gly Pro Met Glu His
 645 650 655
 Thr Gln Ala Val Asp Tyr Val Lys Lys Leu Met Thr Lys Gly Arg Tyr
 660 665 670
 Ser Leu Asp Val Trp Ser
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<210> 732

<211> 2176

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (13).. (984)

<400> 732

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Met Val Cys Cys Gly Pro Gly Arg Met Leu Leu Gly Trp

1 5 10

gcc ggg ttg cta gtc ctg gct gct ctc tgc ctg ctc cag gtg ccc gga 99
Ala Gly Leu Leu Val Leu Ala Ala Leu Cys Leu Leu Gln Val Pro Gly

15 20 25

gct cag gct gca gcc tgt gag cct gtc cgc atc ccg ctg tgc aag tcc 147
Ala Gln Ala Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser

30 35 40 45

ctt ccc tgg aac atg acc aag atg ccc aac cac ctg cac cac agc acc 195
Leu Pro Trp Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr

50 55 60

cag gct aac gcc atc ctg gcc atg gaa cag ttc gaa ggg ctg ctg ggc 243
Gln Ala Asn Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly

65 70 75

acc cac tgc agc ccg gat ctt ctc ttc ttc ctc tgt gca atg tac gca 291
Thr His Cys Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala

80 85 90

ccc att tgc acc atc gac ttc cag cac gag ccc atc aag ccc tgc aag 339
Pro Ile Cys Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys

95 100 105

tct gtg tgt gag cgc gcc cga cag ggc tgc gag ccc att ctc atc aag 387
Ser Val Cys Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys

110 115 120 125

tac cgc cac tcg tgg ccg gaa agc ttg gcc tgc gac gag ctg ccg gtg 435
Tyr Arg His Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu Pro Val

130 135 140

tac gac cgc ggc gtg tgc atc tct cct gag gcc atc gtc acc gcg gac 483
Tyr Asp Arg Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp

145 150 155

gga gcg gat ttt cct atg gat tca agt act gga cac tgc aga ggg gca 531
 Gly Ala Asp Phe Pro Met Asp Ser Ser Thr Gly His Cys Arg Gly Ala
 160 165 170
 agc agc gaa cgt tgc aaa tgt aag cct gtc aga gct aca cag aag acc 579
 Ser Ser Glu Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr
 175 180 185
 tat ttc cgg aac aat tac aac tat gtc atc cgg gct aaa gtt aaa gag 627
 Tyr Phe Arg Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu
 190 195 200 205
 gta aag atg aaa tgt cat gat gtg acc gcc gtt gtg gaa gtg aag gaa 675
 Val Lys Met Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu
 210 215 220
 att cta aag gca tca ctg gta aac att cca agg gac acc gtc aat ctt 723
 Ile Leu Lys Ala Ser Leu Val Asn Ile Pro Arg Asp Thr Val Asn Leu
 225 230 235
 tat acc acc tct ggc tgc ctc tgt cct cca ctt act gtc aat gag gaa 771
 Tyr Thr Thr Ser Gly Cys Leu Cys Pro Pro Leu Thr Val Asn Glu Glu
 240 245 250
 tat gtc atc atg ggc tat gaa gac gag gaa cgt tcc agg tta ctc ttg 819
 Tyr Val Ile Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu
 255 260 265
 gta gaa ggc tct ata gct gag aag tgg aag gat cgg ctt ggt aag aaa 867
 Val Glu Gly Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys
 270 275 280 285
 gtc aag cgc tgg gat atg aaa ctc cga cac ctt gga ctg ggt aaa act 915
 Val Lys Arg Trp Asp Met Lys Leu Arg His Leu Gly Leu Gly Lys Thr
 290 295 300
 gat gct agc gat tcc act cag aat cag aag tct ggc agg aac tct aat 963
 Asp Ala Ser Asp Ser Thr Gln Asn Gln Lys Ser Gly Arg Asn Ser Asn

305

310

315

ccc cgg cca gca cgc agc taa atcctgaaat gtaaaaggcc acacccacgg 1014
 Pro Arg Pro Ala Arg Ser

320

actcccttct aagactggcg ctggctggact aacaaaggaa aaccgcacag ttgtgctcgt 1074
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<210> 733

<211> 323

<212> PRT

<213> Mus musculus

<400> 733

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      20           25           30
Ala Ala Cys Glu Pro Val Arg Ile Pro Leu Cys Lys Ser Leu Pro Trp
      35           40           45
Asn Met Thr Lys Met Pro Asn His Leu His His Ser Thr Gln Ala Asn
      50           55           60
Ala Ile Leu Ala Met Glu Gln Phe Glu Gly Leu Leu Gly Thr His Cys
      65           70           75           80
Ser Pro Asp Leu Leu Phe Phe Leu Cys Ala Met Tyr Ala Pro Ile Cys
      85           90           95
Thr Ile Asp Phe Gln His Glu Pro Ile Lys Pro Cys Lys Ser Val Cys
      100          105          110
Glu Arg Ala Arg Gln Gly Cys Glu Pro Ile Leu Ile Lys Tyr Arg His
      115          120          125
Ser Trp Pro Glu Ser Leu Ala Cys Asp Glu Leu Pro Val Tyr Asp Arg
      130          135          140
Gly Val Cys Ile Ser Pro Glu Ala Ile Val Thr Ala Asp Gly Ala Asp
      145          150          155          160
Phe Pro Met Asp Ser Ser Thr Gly His Cys Arg Gly Ala Ser Ser Glu
      165          170          175
Arg Cys Lys Cys Lys Pro Val Arg Ala Thr Gln Lys Thr Tyr Phe Arg
      180          185          190
Asn Asn Tyr Asn Tyr Val Ile Arg Ala Lys Val Lys Glu Val Lys Met
      195          200          205
Lys Cys His Asp Val Thr Ala Val Val Glu Val Lys Glu Ile Leu Lys

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225	230	235 240
Ser Gly Cys Leu Cys Pro Pro Leu Thr Val Asn Glu Glu Tyr Val Ile		
245	250	255
Met Gly Tyr Glu Asp Glu Glu Arg Ser Arg Leu Leu Leu Val Glu Gly		
260	265	270
Ser Ile Ala Glu Lys Trp Lys Asp Arg Leu Gly Lys Lys Val Lys Arg		
275	280	285
Trp Asp Met Lys Leu Arg His Leu Gly Leu Gly Lys Thr Asp Ala Ser		
290	295	300
Asp Ser Thr Gln Asn Gln Lys Ser Gly Arg Asn Ser Asn Pro Arg Pro		
305	310	315 320
Ala Arg Ser		

<210> 734

<211> 738

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (738)

<400> 734

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cgc gag cgc gag aaa tcc aat gcc tgc aag tgt gtc agc agc ccc agc 96

Arg	Glu	Arg	Glu	Lys	Ser	Asn	Ala	Cys	Lys	Cys	Val	Ser	Ser	Pro	Ser		
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aaa	ggc	aag	acc	agc	tgc	gac	aaa	aac	aag	tta	aac	gtc	ttt	tcc	cgg	144	
Lys	Gly	Lys	Thr	Ser	Cys	Asp	Lys	Asn	Lys	Leu	Asn	Val	Phe	Ser	Arg		
				35				40						45			
gtc	aaa	ctc	ttt	ggc	tcc	aag	aag	agg	cgc	aga	agg	aga	cca	gag	cct	192	
Val	Lys	Leu	Phe	Gly	Ser	Lys	Lys	Arg	Arg	Arg	Arg	Arg	Pro	Glu	Pro		
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cag	ctt	aag	ggt	ata	gtt	acc	aaa	cta	tac	agc	cga	caa	ggc	tac	cac	240	
Gln	Leu	Lys	Gly	Ile	Val	Thr	Lys	Leu	Tyr	Ser	Arg	Gln	Gly	Tyr	His		
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ttg	caa	ctg	cag	gca	gat	gga	acc	att	gat	ggc	acc	aaa	gac	gag	gac	288	
Leu	Gln	Leu	Gln	Ala	Asp	Gly	Thr	Ile	Asp	Gly	Thr	Lys	Asp	Glu	Asp		
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agc	act	tac	act	ctg	ttt	aac	ctc	atc	cct	gtg	ggt	ctt	cgg	gtg	gtg	336	
Ser	Thr	Tyr	Thr	Leu	Phe	Asn	Leu	Ile	Pro	Val	Gly	Leu	Arg	Val	Val		
				100				105						110			
gct	att	caa	gga	ggt	caa	acc	aag	ctg	tat	ttg	gca	atg	aac	agc	gag	384	
Ala	Ile	Gln	Gly	Val	Gln	Thr	Lys	Leu	Tyr	Leu	Ala	Met	Asn	Ser	Glu		
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gga	tac	ttg	tac	acc	tcg	gaa	cat	ttc	aca	cct	gag	tgc	aaa	ttc	aaa	432	
Gly	Tyr	Leu	Tyr	Thr	Ser	Glu	His	Phe	Thr	Pro	Glu	Cys	Lys	Phe	Lys		
				130				135						140			
gaa	tca	gtg	ttt	gaa	aat	tat	tac	gtg	aca	tac	tca	tca	atg	atc	tac	480	
Glu	Ser	Val	Phe	Glu	Asn	Tyr	Tyr	Val	Thr	Tyr	Ser	Ser	Met	Ile	Tyr		
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cgt	cag	cag	caa	tcc	ggc	cga	ggg	tgg	tat	cta	ggt	ctg	aac	aaa	gaa	528	
Arg	Gln	Gln	Gln	Ser	Gly	Arg	Gly	Trp	Tyr	Leu	Gly	Leu	Asn	Lys	Glu		
				165				170						175			

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 Gly Glu Ile Met Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala

180

185

190

cat ttt ctg ccc aaa cca ctg aaa gtg gcc atg tac aag gag cca tct 624
 His Phe Leu Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser

195

200

205

ctg cac gat ctc acg gag ttc tcc cga tct gga agt ggg acc ccg acc 672
 Leu His Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr

210

215

220

aag agc aga agc gtc tct ggt gta ctg aat gga ggc aaa tcc atg agc 720
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225

230

235

240

cac aac gaa tca acg tag

738

His Asn Glu Ser Thr

245

<210> 735

<211> 245

<212> PRT

<213> Mus musculus

<400> 735

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1

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10

15

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20

25

30

Lys Gly Lys Thr Ser Cys Asp Lys Asn Lys Leu Asn Val Phe Ser Arg

35

40

45

Val Lys Leu Phe Gly Ser Lys Lys Arg Arg Arg Arg Arg Pro Glu Pro

50 55 60
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 85 90 95
 Ser Thr Tyr Thr Leu Phe Asn Leu Ile Pro Val Gly Leu Arg Val Val
 100 105 110
 Ala Ile Gln Gly Val Gln Thr Lys Leu Tyr Leu Ala Met Asn Ser Glu
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 Gly Tyr Leu Tyr Thr Ser Glu His Phe Thr Pro Glu Cys Lys Phe Lys
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 Glu Ser Val Phe Glu Asn Tyr Tyr Val Thr Tyr Ser Ser Met Ile Tyr
 145 150 155 160
 Arg Gln Gln Gln Ser Gly Arg Gly Trp Tyr Leu Gly Leu Asn Lys Glu
 165 170 175
 Gly Glu Ile Met Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala
 180 185 190
 His Phe Leu Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser
 195 200 205
 Leu His Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr
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 Lys Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser
 225 230 235 240
 His Asn Glu Ser Thr
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<210> 736

<211> 1080

<212> DNA

<213> Mus musculus

<400> 736

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<210> 737

<211> 656

<212> DNA

<213> Mus musculus

<400> 737

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<210> 738

<211> 2308

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (426).. (2051)

<400> 738

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 atattaggct tatttttttt taaagaattg gatcattaga tatttttagaa aataaactat 360
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 cagct atg aag tct tac act cca tat ttc atg ctc ctg tgg agt gct gtt 470

Met Lys Ser Tyr Thr Pro Tyr Phe Met Leu Leu Trp Ser Ala Val
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Gly Ile Ala Arg Ala Ala Lys Ile Ile Ile Val Pro Pro Ile Met Phe
20 25 30
gaa agc cat ttg tac att ttc aag aca cta gca tcg gcc ttg cac gag 566
Glu Ser His Leu Tyr Ile Phe Lys Thr Leu Ala Ser Ala Leu His Glu
35 40 45
aga ggc cat cac acc gtg ctc ctc ctc tca gaa ggc aga gac att gcc 614
Arg Gly His His Thr Val Leu Leu Leu Ser Glu Gly Arg Asp Ile Ala
50 55 60
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Pro Ser Asn His Tyr Ser Leu Gln Arg Tyr Pro Gly Ile Phe Asn Ser
65 70 75
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Thr Thr Ser Asp Ala Phe Leu Gln Ser Lys Met Arg Asn Ile Phe Ser
80 85 90 95
ggg aga ttg aca gca gtt gaa ctg gtt gac ata ctg gat cac tat act 758
Gly Arg Leu Thr Ala Val Glu Leu Val Asp Ile Leu Asp His Tyr Thr
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Lys Asn Cys Asp Met Met Val Gly Asn Gln Ala Leu Ile Gln Gly Leu
115 120 125
aaa aaa gaa aag ttt gac ctg cta ctg gtt gac ccc aat gat atg tgt 854
Lys Lys Glu Lys Phe Asp Leu Leu Leu Val Asp Pro Asn Asp Met Cys
130 135 140
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Gly Phe Val Ile Ala His Leu Leu Gly Val Lys Tyr Ala Val Phe Ser
145 150 155

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 Thr Gly Leu Trp Tyr Pro Ala Glu Val Gly Ala Pro Ala Pro Leu Ala
 160 165 170 175
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 Tyr Val Pro Glu Phe Asn Ser Leu Leu Thr Asp Arg Met Asn Phe Leu
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 Glu Arg Met Lys Asn Thr Gly Val Tyr Leu Ile Ser Arg Ile Gly Val
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 Ser Phe Leu Val Leu Pro Lys Tyr Glu Arg Ile Met Gln Lys Tyr Asn
 210 215 220
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 Leu Leu Pro Ala Lys Ser Met Tyr Asp Leu Val His Gly Ser Ser Leu
 225 230 235
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 Trp Met Leu Cys Thr Asp Val Ala Leu Glu Phe Pro Arg Pro Thr Leu
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 260 265 270
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 Phe Val Leu Val Ser Phe Gly Ala Gly Val Lys Tyr Leu Ser Glu Asp
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 Ile Ala Asn Lys Leu Ala Gly Ala Leu Gly Arg Leu Pro Gln Lys Val

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Ile Trp Arg Phe Ser Gly Thr Lys Pro Lys Asn Leu Gly Asn Asn Thr			
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Lys Leu Ile Glu Trp Leu Pro Gln Asn Asp Leu Leu Gly His Ser Asn			
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atc aga gcc ttc cta agc cat ggt ggt ttg aac agt ata ttt gaa act			1526
Ile Arg Ala Phe Leu Ser His Gly Gly Leu Asn Ser Ile Phe Glu Thr			
355	360	365	
atg tat cat ggt gtc cct gta gtg gga atc cca ctg ttt gga gac cat			1574
Met Tyr His Gly Val Pro Val Val Gly Ile Pro Leu Phe Gly Asp His			
370	375	380	
tat gat act atg act aga gta cag gca aaa ggc atg ggg atc ttg tta			1622
Tyr Asp Thr Met Thr Arg Val Gln Ala Lys Gly Met Gly Ile Leu Leu			
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gaa tgg aat aca gtt act gaa gga gag ctg tat gat gcc ctg gtg aaa			1670
Glu Trp Asn Thr Val Thr Glu Gly Glu Leu Tyr Asp Ala Leu Val Lys			
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gtt atc aat aat ccc agt tat cgg cag agg gct cag aag tta tcg gaa			1718
Val Ile Asn Asn Pro Ser Tyr Arg Gln Arg Ala Gln Lys Leu Ser Glu			
420	425	430	
att cac aag gat caa ccc ggc cac cct gtc aat cgg act acc tat tgg			1766
Ile His Lys Asp Gln Pro Gly His Pro Val Asn Arg Thr Thr Tyr Trp			
435	440	445	
ata gac tac att ctt cgc cat gac gga gcc cat cac ctc cgt tct gct			1814
Ile Asp Tyr Ile Leu Arg His Asp Gly Ala His His Leu Arg Ser Ala			
450	455	460	
gtc cat cag atc tct ttc tgc cag tat ttc cta ctg gat att gcc ttt			1862

Val His Gln Ile Ser Phe Cys Gln Tyr Phe Leu Leu Asp Ile Ala Phe
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 Val Leu Leu Leu Gly Ala Val Leu Leu Tyr Phe Ile Leu Ser Tyr Val
 480 485 490 495
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 Thr Lys Phe Ile Tyr Arg Lys Ile Lys Ser Leu Trp Ser Lys Asn Lys
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 His Ser Thr Val Asn Gly His Tyr Gln Asn Gly Ile Pro Asn Gly Lys
 515 520 525
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 Tyr Lys Gly Asn Gly His Ile Lys His Glu Lys Lys Val Lys
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<210> 739

<211> 541

<212> PRT

<213> Mus musculus

<400> 739

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Gly His His Thr Val Leu Leu Leu Ser Glu Gly Arg Asp Ile Ala Pro		
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Ser Asn His Tyr Ser Leu Gln Arg Tyr Pro Gly Ile Phe Asn Ser Thr		
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Thr Ser Asp Ala Phe Leu Gln Ser Lys Met Arg Asn Ile Phe Ser Gly		
85	90	95
Arg Leu Thr Ala Val Glu Leu Val Asp Ile Leu Asp His Tyr Thr Lys		
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115	120	125
Lys Glu Lys Phe Asp Leu Leu Leu Val Asp Pro Asn Asp Met Cys Gly		
130	135	140
Phe Val Ile Ala His Leu Leu Gly Val Lys Tyr Ala Val Phe Ser Thr		
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Gly Leu Trp Tyr Pro Ala Glu Val Gly Ala Pro Ala Pro Leu Ala Tyr		
165	170	175
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180	185	190
Arg Met Lys Asn Thr Gly Val Tyr Leu Ile Ser Arg Ile Gly Val Ser		
195	200	205
Phe Leu Val Leu Pro Lys Tyr Glu Arg Ile Met Gln Lys Tyr Asn Leu		
210	215	220
Leu Pro Ala Lys Ser Met Tyr Asp Leu Val His Gly Ser Ser Leu Trp		
225	230	235
Met Leu Cys Thr Asp Val Ala Leu Glu Phe Pro Arg Pro Thr Leu Pro		
245	250	255

Asn Val Val Tyr Val Gly Gly Ile Leu Thr Lys Pro Ala Ser Pro Leu
 260 265 270
 Pro Glu Asp Leu Gln Arg Trp Val Ser Gly Ala Gln Glu His Gly Phe
 275 280 285
 Val Leu Val Ser Phe Gly Ala Gly Val Lys Tyr Leu Ser Glu Asp Ile
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 Ala Asn Lys Leu Ala Gly Ala Leu Gly Arg Leu Pro Gln Lys Val Ile
 305 310 315 320
 Trp Arg Phe Ser Gly Thr Lys Pro Lys Asn Leu Gly Asn Asn Thr Lys
 325 330 335
 Leu Ile Glu Trp Leu Pro Gln Asn Asp Leu Leu Gly His Ser Asn Ile
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 Asp Thr Met Thr Arg Val Gln Ala Lys Gly Met Gly Ile Leu Leu Glu
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 Trp Asn Thr Val Thr Glu Gly Glu Leu Tyr Asp Ala Leu Val Lys Val
 405 410 415
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 420 425 430
 His Lys Asp Gln Pro Gly His Pro Val Asn Arg Thr Thr Tyr Trp Ile
 435 440 445
 Asp Tyr Ile Leu Arg His Asp Gly Ala His His Leu Arg Ser Ala Val
 450 455 460
 His Gln Ile Ser Phe Cys Gln Tyr Phe Leu Leu Asp Ile Ala Phe Val
 465 470 475 480
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	485		490		495
Lys Phe Ile Tyr Arg Lys Ile Lys Ser Leu Trp Ser Lys Asn Lys His					
500		505		510	
Ser Thr Val Asn Gly His Tyr Gln Asn Gly Ile Pro Asn Gly Lys Tyr					
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<210> 740

<211> 2286

<212> DNA

<213> Mus musculus

<400> 740

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<211> 2948

<212> DNA

<213> Mus musculus

<220>

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<222> (528).. (2186)

<400> 741

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 ccccatcttt ttttttaaatt gtgttttta aatttcitat ttttttggc cggtcgtctc 420
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Met His Cys

1

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5

10

15

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 Val Ser Leu Leu Leu Gly Ile Thr Ala Ala Tyr Ile Val Gly Tyr Gln

20

25

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35

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 Phe Ile Gln Thr Asp Asn Tyr Tyr Phe Ser Phe Gly Leu Tyr Gly Ala

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ttt tta gcc tcg cat ctc atc atc caa agc ctc ttt gcc ttt ttg gaa 728
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55

60

65

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cac cgg aaa atg aag aag tcc ctt gaa acc ccg att aaa ttg aac aaa 776
His Arg Lys Met Lys Lys Ser Leu Glu Thr Pro Ile Lys Leu Asn Lys
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acg gta gca ctc tgc atc gct gcg tac caa gag gac cct gac tac tta 824
Thr Val Ala Leu Cys Ile Ala Ala Tyr Gln Glu Asp Pro Asp Tyr Leu
      85              90              95

cgg aaa tgt ttg caa tct gtg aaa agg ctg acc tac cct ggg att aaa 872
Arg Lys Cys Leu Gln Ser Val Lys Arg Leu Thr Tyr Pro Gly Ile Lys
100              105              110              115

gtc gtg atg gtc atc gat ggg aac tca gac gac gac ctt tac atg atg 920
Val Val Met Val Ile Asp Gly Asn Ser Asp Asp Asp Leu Tyr Met Met
      120              125              130

gac ata ttc agc gaa gtt atg ggc agg gac aaa tcg gcc acg tac atc 968
Asp Ile Phe Ser Glu Val Met Gly Arg Asp Lys Ser Ala Thr Tyr Ile
      135              140              145

tgg aag aac aac ttt cat gaa aag gga cct ggt gag aca gaa gag tcc 1016
Trp Lys Asn Asn Phe His Glu Lys Gly Pro Gly Glu Thr Glu Glu Ser
      150              155              160

cat aaa gaa agt tca caa cat gtc acc caa ttg gtc ttg tct aac aaa 1064
His Lys Glu Ser Ser Gln His Val Thr Gln Leu Val Leu Ser Asn Lys
      165              170              175

agt att tgc atc atg caa aaa tgg ggt gga aag aga gaa gtc atg tac 1112
Ser Ile Cys Ile Met Gln Lys Trp Gly Gly Lys Arg Glu Val Met Tyr
180              185              190              195

aca gcc ttc aga gca ctg ggg cga agc gtg gat tat gta cag gtg tgt 1160
Thr Ala Phe Arg Ala Leu Gly Arg Ser Val Asp Tyr Val Gln Val Cys
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Asp Ser Asp Thr Met Leu Asp Pro Ala Ser Ser Val Glu Met Val Lys

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Val Leu Glu Glu Asp Pro Met Val Gly Gly Val Gly Gly Asp Val Gln			
230	235	240	
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Ile Leu Asn Lys Tyr Asp Ser Trp Ile Ser Phe Leu Ser Ser Val Arg			
245	250	255	
tac tgg atg gct ttt aat ata gaa agg gcc tgc cag tct tat ttt ggc			1352
Tyr Trp Met Ala Phe Asn Ile Glu Arg Ala Cys Gln Ser Tyr Phe Gly			
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tgt gtc cag tgc ata agc ggt cct ctg gga atg tac aga aac tcc ttg			1400
Cys Val Gln Cys Ile Ser Gly Pro Leu Gly Met Tyr Arg Asn Ser Leu			
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ctg cat gaa ttt gtg gaa gac tgg tac aat cag gaa ttc atg ggt aac			1448
Leu His Glu Phe Val Glu Asp Trp Tyr Asn Gln Glu Phe Met Gly Asn			
295	300	305	
caa tgc agt ttt ggt gac gac agg cac ctt acc aac agg gtg ttg agt			1496
Gln Cys Ser Phe Gly Asp Asp Arg His Leu Thr Asn Arg Val Leu Ser			
310	315	320	
ctg ggc tat gca act aaa tac acg gct cgg tcc aag tgc ctt act gaa			1544
Leu Gly Tyr Ala Thr Lys Tyr Thr Ala Arg Ser Lys Cys Leu Thr Glu			
325	330	335	
act ccc ata gaa tat ctg aga tgg ctg aac cag cag acc cgt tgg agc			1592
Thr Pro Ile Glu Tyr Leu Arg Trp Leu Asn Gln Gln Thr Arg Trp Ser			
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aag tcc tac ttc cga gag tgg ctg tac aat gcc atg tgg ttt cac aag			1640
Lys Ser Tyr Phe Arg Glu Trp Leu Tyr Asn Ala Met Trp Phe His Lys			
360	365	370	
cat cac ttg tgg atg acc tat gaa gct gtt atc act gga ttc ttt cct			1688

His His Leu Trp Met Thr Tyr Glu Ala Val Ile Thr Gly Phe Phe Pro
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 Phe Phe Leu Ile Ala Thr Val Ile Gln Leu Phe Tyr Arg Gly Lys Ile
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 Met Phe Ala Ile Ala Thr Ile Asn Lys Ala Gly Trp Gly Thr Ser Gly
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 Arg Lys Thr Ile Val Val Asn Phe Ile Gly Leu Ile Pro Val Ser Val
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 485 490 495
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 Thr Leu Ile Tyr Ala Cys Tyr Trp Val Met Leu Leu Thr Leu Tyr Val
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gtt ctc atc aat aag tgt ggc agg cgg aag aag gga caa cag tat gac 2168
Val Leu Ile Asn Lys Cys Gly Arg Arg Lys Lys Gly Gln Gln Tyr Asp

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Met Val Leu Asp Val

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<210> 742

<211> 552

<212> PRT

<213> Mus musculus

<400> 742

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Tyr Gly Ala Phe Leu Ala Ser His Leu Ile Ile Gln Ser Leu Phe Ala		
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Phe Leu Glu His Arg Lys Met Lys Lys Ser Leu Glu Thr Pro Ile Lys		
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Leu Asn Lys Thr Val Ala Leu Cys Ile Ala Ala Tyr Gln Glu Asp Pro		
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Asp Tyr Leu Arg Lys Cys Leu Gln Ser Val Lys Arg Leu Thr Tyr Pro		
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Glu Glu Ser His Lys Glu Ser Ser Gln His Val Thr Gln Leu Val Leu		
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Ser Asn Lys Ser Ile Cys Ile Met Gln Lys Trp Gly Gly Lys Arg Glu		
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Val Met Tyr Thr Ala Phe Arg Ala Leu Gly Arg Ser Val Asp Tyr Val		
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225	230	235
Asp Val Gln Ile Leu Asn Lys Tyr Asp Ser Trp Ile Ser Phe Leu Ser		
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 Tyr Phe Gly Cys Val Gln Cys Ile Ser Gly Pro Leu Gly Met Tyr Arg
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 Met Gly Asn Gln Cys Ser Phe Gly Asp Asp Arg His Leu Thr Asn Arg
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 Arg Trp Ser Lys Ser Tyr Phe Arg Glu Trp Leu Tyr Asn Ala Met Trp
 355 360 365
 Phe His Lys His His Leu Trp Met Thr Tyr Glu Ala Val Ile Thr Gly
 370 375 380
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 385 390 395 400
 Gly Lys Ile Trp Asn Ile Leu Leu Phe Leu Leu Thr Val Gln Leu Val
 405 410 415
 Gly Leu Ile Lys Ser Ser Phe Ala Ser Cys Leu Arg Gly Asn Ile Val
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 Met Val Phe Met Ser Leu Tyr Ser Val Leu Tyr Met Ser Ser Leu Leu
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 Pro Ala Lys Met Phe Ala Ile Ala Thr Ile Asn Lys Ala Gly Trp Gly
 450 455 460
 Thr Ser Gly Arg Lys Thr Ile Val Val Asn Phe Ile Gly Leu Ile Pro
 465 470 475 480
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	485	490	495
Tyr Lys Glu Ser Lys Lys Pro Phe Ser Glu Ser Lys Gln Thr Val Leu			
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Ile Val Gly Thr Leu Ile Tyr Ala Cys Tyr Trp Val Met Leu Leu Thr			
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<211> 3167

<212> DNA

<213> Mus musculus

<400> 743

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<213> Mus musculus

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<222> (35).. (1156)

<400> 744

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Asp Lys Pro Leu Lys Val Leu Glu Gln Leu Gly Lys Glu Val Leu Thr

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15

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gag tac cta gaa aaa tta gta caa agc aat gta ctg aaa tta aag gag 151

Glu Tyr Leu Glu Lys Leu Val Gln Ser Asn Val Leu Lys Leu Lys Glu
 25 30 35
 gaa gat aaa caa aaa ttt aac aat gct gaa cgc agt gac aag cgt tgg 199
 Glu Asp Lys Gln Lys Phe Asn Asn Ala Glu Arg Ser Asp Lys Arg Trp
 40 45 50 55
 gtt ttt gta gat gcc atg aaa aag aaa cac agc aaa gta ggt gaa atg 247
 Val Phe Val Asp Ala Met Lys Lys Lys His Ser Lys Val Gly Glu Met
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 Ile Ile Cys Asn Thr Glu Phe Lys His Leu Ser Leu Arg Tyr Gly Ala
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 Gln Ile Phe Asn Asn Cys His Cys Pro Gly Leu Arg Asp Lys Pro Lys
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 315 320 325
 aaa cat gct tgc tct tgt cat ctc ttt gat ata ttc ctg aag gtg caa 1063
 Lys His Ala Cys Ser Cys His Leu Phe Asp Ile Phe Leu Lys Val Gln

330 335 340
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<211> 373

<212> PRT

<213> Mus musculus

<400> 745

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 35 40 45
 Glu Arg Ser Asp Lys Arg Trp Val Phe Val Asp Ala Met Lys Lys Lys
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 His Ser Lys Val Gly Glu Met Leu Leu Gln Thr Phe Phe Ser Val Asp
 65 70 75 80
 Pro Gly Ser His His Gly Glu Ala Asn Leu Glu Met Glu Glu Pro Glu

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Gly Arg Thr Arg Lys Ala Leu Ile Ile Cys Asn Thr Glu Phe Lys His		
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Leu Ser Leu Arg Tyr Gly Ala Lys Phe Asp Ile Ile Gly Met Lys Gly		
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Leu Leu Glu Asp Leu Gly Tyr Asp Val Val Val Lys Glu Glu Leu Thr		
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Ala Glu Gly Met Glu Ser Glu Met Lys Asp Phe Ala Ala Leu Ser Glu		
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His Gln Thr Ser Asp Ser Thr Phe Leu Val Leu Met Ser His Gly Thr		
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Leu His Gly Ile Cys Gly Thr Met His Ser Glu Lys Thr Pro Asp Val		
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Leu Gln Tyr Asp Thr Ile Tyr Gln Ile Phe Asn Asn Cys His Cys Pro		
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Gly Leu Arg Asp Lys Pro Lys Val Ile Ile Val Gln Ala Cys Arg Gly		
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Gly Asn Ser Gly Glu Met Trp Ile Arg Glu Ser Ser Lys Pro Gln Leu		
260	265	270
Cys Arg Gly Val Asp Leu Pro Arg Asn Met Glu Ala Asp Ala Val Lys		
275	280	285
Leu Ser His Val Glu Lys Asp Phe Ile Ala Phe Tyr Ser Thr Thr Pro		
290	295	300
His His Leu Ser Tyr Arg Asp Lys Thr Gly Gly Ser Tyr Phe Ile Thr		
305	310	315
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Arg Leu Ile Ser Cys Phe Arg Lys His Ala Cys Ser Cys His Leu Phe
 325 330 335
 Asp Ile Phe Leu Lys Val Gln Gln Ser Phe Glu Lys Ala Ser Ile His
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<210> 746

<211> 598

<212> DNA

<213> Mus musculus

<400> 746

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 ccitatgacc catgtctctg agtgccctgc tcacactcgc atctgagtgg gtcgtttcct 360
 tggagaagtt gacttacgat caattgccaa acttacattt ggatgggcta cccgaaaggc 420
 agaatcggct accatccgcg cacacagggg tcccgcttgc ccgtagatca atggggcgat 480
 ttcttgggag gatgggtgtg gggaacaggc gcacagtcac aggtgggtgat gatgaacaag 540
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<210> 747

<211> 548

<212> DNA

<213> Mus musculus

<400> 747

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cttactggag ctigccaact atctagagaa ggacacttta tccccaacct gctttaacca 180
ggaggccagt tcatctgccg accccaagg acatggaggt gaatgtgata gacagactgt 240
ccccgtctg caccctcatt caccaccatc cggtagccgc gcttcaggcc cagatctgca 300
gcacatttct tgccaacaat cattaaatgt cctagaagac ttcatcatc atcatctgct 360
acagaaatct gggatataatg ctctttgggt atcaccagaa agtgtgttgg tgcttgaggg 420
gaaatgtcat gaaaagcaag acaccggtcg tcctcgaaga tgatcttggc ggggatttcg 480
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<210> 748

<211> 990

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (990)

<400> 748

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    1             5             10             15
tct ccg gag gaa atg ctg gac acc cag tgg gag cta tgg aag aag act 96
Ser Pro Glu Glu Met Leu Asp Thr Gln Trp Glu Leu Trp Lys Lys Thr

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20	25	30	
cac cag aag cag tat aac agc aag gtg gat gaa atc tct cgg cgt tta			144
His Gln Lys Gln Tyr Asn Ser Lys Val Asp Glu Ile Ser Arg Arg Leu			
35	40	45	
att tgg gag aaa aac ctg aag caa atc tct gcc cat aac ctg gag gcc			192
Ile Trp Glu Lys Asn Leu Lys Gln Ile Ser Ala His Asn Leu Glu Ala			
50	55	60	
tct ctt ggt gtc cat aca tat gaa ctg gcc atg aac cac ttg gga gac			240
Ser Leu Gly Val His Thr Tyr Glu Leu Ala Met Asn His Leu Gly Asp			
65	70	75	80
atg acc agt gaa gaa gtg gtt cag aag atg acg gga ctc aga ata cct			288
Met Thr Ser Glu Glu Val Val Gln Lys Met Thr Gly Leu Arg Ile Pro			
85	90	95	
ccc tct cga tcc tac agt aat gac act ctc tat acc cca gag tgg gaa			336
Pro Ser Arg Ser Tyr Ser Asn Asp Thr Leu Tyr Thr Pro Glu Trp Glu			
100	105	110	
ggc agg gtc cca gac tcc atc gac tat cga aag aaa gga tac gtt act			384
Gly Arg Val Pro Asp Ser Ile Asp Tyr Arg Lys Lys Gly Tyr Val Thr			
115	120	125	
cca gtg aag aac cag ggc cag tgt ggt tcc tgt tgg gct ttc agc tct			432
Pro Val Lys Asn Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ser			
130	135	140	
gcc ggg gcc ctg gag ggc caa ctc aag aag aaa act ggt aaa ctc cta			480
Ala Gly Ala Leu Glu Gly Gln Leu Lys Lys Lys Thr Gly Lys Leu Leu			
145	150	155	160
gct ctg agt ccc cag aat ctt gtg gac tgt gtg act gag aat tat ggc			528
Ala Leu Ser Pro Gln Asn Leu Val Asp Cys Val Thr Glu Asn Tyr Gly			
165	170	175	
tgt gga ggc ggc tat atg acc act gct ttc caa tac gtg cag cag aac			576

Cys Gly Gly Gly Tyr Met Thr Thr Ala Phe Gln Tyr Val Gln Gln Asn
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 gga ggc atc gac tct gaa gat gct ttc cca tat gtg ggc cag gat gaa 624
 Gly Gly Ile Asp Ser Glu Asp Ala Phe Pro Tyr Val Gly Gln Asp Glu
 195 200 205
 agt tgt atg tat aac gcc acg gca aag gca gct aaa tgc aga ggg tac 672
 Ser Cys Met Tyr Asn Ala Thr Ala Lys Ala Ala Lys Cys Arg Gly Tyr
 210 215 220
 aga gag att cct gtg ggg aac gag aaa gcc ctg aag aga gca gtg gcg 720
 Arg Glu Ile Pro Val Gly Asn Glu Lys Ala Leu Lys Arg Ala Val Ala
 225 230 235 240
 cgg gta gga ccc atc tct gtg tcc atc gac gca agc ttg gca tct ttc 768
 Arg Val Gly Pro Ile Ser Val Ser Ile Asp Ala Ser Leu Ala Ser Phe
 245 250 255
 cag ttt tac agc aga ggt gtg tac tat gat gaa aat tgt gac cgt gat 816
 Gln Phe Tyr Ser Arg Gly Val Tyr Tyr Asp Glu Asn Cys Asp Arg Asp
 260 265 270
 aat gtg aac cat gca gtg ttg gtg gtg ggc tat ggc acc cag aag gga 864
 Asn Val Asn His Ala Val Leu Val Val Gly Tyr Gly Thr Gln Lys Gly
 275 280 285
 agc aag cac tgg ata att aaa aac agc tgg gga gag agc tgg gga aac 912
 Ser Lys His Trp Ile Ile Lys Asn Ser Trp Gly Glu Ser Trp Gly Asn
 290 295 300
 aaa gga tat gct ctc ttg gct cgg aat aag aac aac gcc tgc ggc att 960
 Lys Gly Tyr Ala Leu Leu Ala Arg Asn Lys Asn Asn Ala Cys Gly Ile
 305 310 315 320
 acc aac atg gcc agc ttc ccc aag atg tga 990
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 325 330

<210> 749

<211> 329

<212> PRT

<213> Mus musculus

<400> 749

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 His Gln Lys Gln Tyr Asn Ser Lys Val Asp Glu Ile Ser Arg Arg Leu
 35 40 45
 Ile Trp Glu Lys Asn Leu Lys Gln Ile Ser Ala His Asn Leu Glu Ala
 50 55 60
 Ser Leu Gly Val His Thr Tyr Glu Leu Ala Met Asn His Leu Gly Asp
 65 70 75 80
 Met Thr Ser Glu Glu Val Val Gln Lys Met Thr Gly Leu Arg Ile Pro
 85 90 95
 Pro Ser Arg Ser Tyr Ser Asn Asp Thr Leu Tyr Thr Pro Glu Trp Glu
 100 105 110
 Gly Arg Val Pro Asp Ser Ile Asp Tyr Arg Lys Lys Gly Tyr Val Thr
 115 120 125
 Pro Val Lys Asn Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ser
 130 135 140
 Ala Gly Ala Leu Glu Gly Gln Leu Lys Lys Lys Thr Gly Lys Leu Leu
 145 150 155 160
 Ala Leu Ser Pro Gln Asn Leu Val Asp Cys Val Thr Glu Asn Tyr Gly
 165 170 175

Cys Gly Gly Gly Tyr Met Thr Thr Ala Phe Gln Tyr Val Gln Gln Asn
 180 185 190
 Gly Gly Ile Asp Ser Glu Asp Ala Phe Pro Tyr Val Gly Gln Asp Glu
 195 200 205
 Ser Cys Met Tyr Asn Ala Thr Ala Lys Ala Ala Lys Cys Arg Gly Tyr
 210 215 220
 Arg Glu Ile Pro Val Gly Asn Glu Lys Ala Leu Lys Arg Ala Val Ala
 225 230 235 240
 Arg Val Gly Pro Ile Ser Val Ser Ile Asp Ala Ser Leu Ala Ser Phe
 245 250 255
 Gln Phe Tyr Ser Arg Gly Val Tyr Tyr Asp Glu Asn Cys Asp Arg Asp
 260 265 270
 Asn Val Asn His Ala Val Leu Val Val Gly Tyr Gly Thr Gln Lys Gly
 275 280 285
 Ser Lys His Trp Ile Ile Lys Asn Ser Trp Gly Glu Ser Trp Gly Asn
 290 295 300
 Lys Gly Tyr Ala Leu Leu Ala Arg Asn Lys Asn Asn Ala Cys Gly Ile
 305 310 315 320
 Thr Asn Met Ala Ser Phe Pro Lys Met
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<210> 750

<211> 124

<212> DNA

<213> Mus musculus

<400> 750

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tgat

124

<210> 751

<211> 1814

<212> DNA

<213> Mus musculus

<400> 751

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ctgctcctcg gggagcgacc atttgtcccc cgccaattca caggcaattt agcgtgcgct 180
aatgggcccg cgccitttgig cggccggcgc cgccattggc cgccgagtgt gggaacggcc 240
gcggcgcccc gaccccaggc gccggggcgc tgcccgcgcc tatatagggc tggcgtgctg 300
gggtccaggt cgcgccagtc cgggacgcct ggctctgtcc gctccgctcc gctccgctcg 360
ctaatcgctt ccagagctcc aggcattggc ccaagtaccg tggcgggtgga gatgctcagt 420
cccaaggaga aaaaccgagt aagtgcact cgcccggcgc gcgccgtccg gttcccccg 480
ggcctccggc gtccgcccgc caccitgacgc ctctcctccc gcagctgcgg aagccgggtg 540
tggagaagat gcgtcgggac cgcatcaaca gcagcataga gcagctgaag ctgctgctgg 600
agcaggagtt cgcgcggcac cagcccaact ccaagctgga gaaggccgac atcctggaga 660
tggccgtcag ctacctgaaa cacagcaaag gtgagcccgg cgcttgcgc cgctcctgc 720
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ccttcgccgc ggccgccggc cccaagagcc tgcaccagga ctacagcgag ggctactcct 840
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<210> 752

<211> 1185

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (1011)

<400> 752

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 ttg gcg gtg atg act ctg gtg gct gcc gct tac acc gta gct tta aga 96
 Leu Ala Val Met Thr Leu Val Ala Ala Ala Tyr Thr Val Ala Leu Arg
 20 25 30
 tac aca agg aca aca gct gaa gaa ctc tac ttc tca acc act gcc gtg 144
 Tyr Thr Arg Thr Thr Ala Glu Glu Leu Tyr Phe Ser Thr Thr Ala Val

35	40	45	
tgt atc aca gaa gtg ata aag tta ctg ata agt gtt ggc ctg tta gct	192		
Cys Ile Thr Glu Val Ile Lys Leu Leu Ile Ser Val Gly Leu Leu Ala			
50	55	60	
aag gaa act ggc agt ttg ggt aga ttt aaa gcc tca tta agt gaa aat	240		
Lys Glu Thr Gly Ser Leu Gly Arg Phe Lys Ala Ser Leu Ser Glu Asn			
65	70	75	80
gtc ttg ggg agc ccc aag gaa ctg gcg aag ttg agt gtg cca tca cta	288		
Val Leu Gly Ser Pro Lys Glu Leu Ala Lys Leu Ser Val Pro Ser Leu			
85	90	95	
gtg tat gct gtg cag aac aac atg gcc ttc ctg gct ctc agt aat ctg	336		
Val Tyr Ala Val Gln Asn Asn Met Ala Phe Leu Ala Leu Ser Asn Leu			
100	105	110	
gat gca gca gtg tac cag gtg acc tat caa ctg aag atc ccc tgc act	384		
Asp Ala Ala Val Tyr Gln Val Thr Tyr Gln Leu Lys Ile Pro Cys Thr			
115	120	125	
gct tta tgt act gtt tta atg tta aat cga aca ctc agc aaa tta cag	432		
Ala Leu Cys Thr Val Leu Met Leu Asn Arg Thr Leu Ser Lys Leu Gln			
130	135	140	
tgg att tcc gtc ttc atg ctg tgt ggt ggg gtc aca ctc gta cag tgg	480		
Trp Ile Ser Val Phe Met Leu Cys Gly Gly Val Thr Leu Val Gln Trp			
145	150	155	160
aaa cca gcc caa gct tca aaa gtc gtg gta gcg cag aat cca ttg tta	528		
Lys Pro Ala Gln Ala Ser Lys Val Val Val Ala Gln Asn Pro Leu Leu			
165	170	175	
ggc ttt ggt gct ata gct att gct gta ttg tgc tct gga ttt gca gga	576		
Gly Phe Gly Ala Ile Ala Ile Ala Val Leu Cys Ser Gly Phe Ala Gly			
180	185	190	
gtt tat ttt gaa aaa gtc tta aag agt tcc gac act tcc ctt tgg gtg	624		

Val Tyr Phe Glu Lys Val Leu Lys Ser Ser Asp Thr Ser Leu Trp Val
195 200 205
aga aac att cag atg tat ctg tca ggg atc gtt gtg acg tta gct ggt 672
Arg Asn Ile Gln Met Tyr Leu Ser Gly Ile Val Val Thr Leu Ala Gly
210 215 220
acc tac ttg tca gat gga gct gaa att caa gaa aaa gga ttc ttc tat 720
Thr Tyr Leu Ser Asp Gly Ala Glu Ile Gln Glu Lys Gly Phe Phe Tyr
225 230 235 240
ggc tac acg tat tat gtc tgg ttt gtt atc ttc ctt gct agt gtg gga 768
Gly Tyr Thr Tyr Tyr Val Trp Phe Val Ile Phe Leu Ala Ser Val Gly
245 250 255
ggc ctc tac acg tca gtg gtg gtg aag tat aca gac aac atc atg aaa 816
Gly Leu Tyr Thr Ser Val Val Val Lys Tyr Thr Asp Asn Ile Met Lys
260 265 270
ggc ttc tct gct gcc gca gcc att gtt ctt tct acc att gct tca gtc 864
Gly Phe Ser Ala Ala Ala Ala Ile Val Leu Ser Thr Ile Ala Ser Val
275 280 285
cta ctg ttt gga tta cag ata aca ctt tca ttt gca ctg gga gct ctt 912
Leu Leu Phe Gly Leu Gln Ile Thr Leu Ser Phe Ala Leu Gly Ala Leu
290 295 300
ctt gtg tgt gtt tcc ata tat ctc tat ggg tta ccc aga caa gat act 960
Leu Val Cys Val Ser Ile Tyr Leu Tyr Gly Leu Pro Arg Gln Asp Thr
305 310 315 320
aca tcc att caa caa gaa gca act tca aaa gag aga atc att ggt gtg 1008
Thr Ser Ile Gln Gln Glu Ala Thr Ser Lys Glu Arg Ile Ile Gly Val
325 330 335
tga tttgaatctc aagagattcc tataaggact taaactgttg ataataaatt 1061
agagcccttaa gtcaacccca gatggtagggt taaataatgt caacaaaata attgtatgac 1121
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aaaa

1185

<210> 753

<211> 336

<212> PRT

<213> Mus musculus

<400> 753

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 35 40 45
 Cys Ile Thr Glu Val Ile Lys Leu Leu Ile Ser Val Gly Leu Leu Ala
 50 55 60
 Lys Glu Thr Gly Ser Leu Gly Arg Phe Lys Ala Ser Leu Ser Glu Asn
 65 70 75 80
 Val Leu Gly Ser Pro Lys Glu Leu Ala Lys Leu Ser Val Pro Ser Leu
 85 90 95
 Val Tyr Ala Val Gln Asn Asn Met Ala Phe Leu Ala Leu Ser Asn Leu
 100 105 110
 Asp Ala Ala Val Tyr Gln Val Thr Tyr Gln Leu Lys Ile Pro Cys Thr
 115 120 125
 Ala Leu Cys Thr Val Leu Met Leu Asn Arg Thr Leu Ser Lys Leu Gln
 130 135 140
 Trp Ile Ser Val Phe Met Leu Cys Gly Gly Val Thr Leu Val Gln Trp
 145 150 155 160
 Lys Pro Ala Gln Ala Ser Lys Val Val Val Ala Gln Asn Pro Leu Leu

	165	170	175
Gly Phe Gly Ala Ile Ala Ile Ala Val Leu Cys Ser Gly Phe Ala Gly			
	180	185	190
Val Tyr Phe Glu Lys Val Leu Lys Ser Ser Asp Thr Ser Leu Trp Val			
	195	200	205
Arg Asn Ile Gln Met Tyr Leu Ser Gly Ile Val Val Thr Leu Ala Gly			
	210	215	220
Thr Tyr Leu Ser Asp Gly Ala Glu Ile Gln Glu Lys Gly Phe Phe Tyr			
225	230	235	240
Gly Tyr Thr Tyr Tyr Val Trp Phe Val Ile Phe Leu Ala Ser Val Gly			
	245	250	255
Gly Leu Tyr Thr Ser Val Val Val Lys Tyr Thr Asp Asn Ile Met Lys			
	260	265	270
Gly Phe Ser Ala Ala Ala Ala Ile Val Leu Ser Thr Ile Ala Ser Val			
	275	280	285
Leu Leu Phe Gly Leu Gln Ile Thr Leu Ser Phe Ala Leu Gly Ala Leu			
	290	295	300
Leu Val Cys Val Ser Ile Tyr Leu Tyr Gly Leu Pro Arg Gln Asp Thr			
305	310	315	320
Thr Ser Ile Gln Gln Glu Ala Thr Ser Lys Glu Arg Ile Ile Gly Val			
	325	330	335

<210> 754

<211> 299

<212> DNA

<213> Mus musculus

<400> 754

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 atggacacat ttggtcctgg ggatgatgat gaaatcgtgt ttgatgatat tggagaggat 180
 gatgaagaca ttgatgacat ctaacataaa ctaagcatgc tacattccaa gttctctgaa 240
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<210> 755

<211> 865

<212> DNA

<213> Mus musculus

<220>

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<400> 755

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 Met Gly Lys Lys Thr Lys Arg Thr Ala Asp Ser Ser Ser Ser Glu
 1 5 10 15
 gat gag gag gaa tat gtg gtg gaa aag gtg ttg gac agg cgc atg gtt 156
 Asp Glu Glu Glu Tyr Val Val Glu Lys Val Leu Asp Arg Arg Met Val
 20 25 30
 aag ggg caa gtg gaa tat ctg ttg aag tgg aaa ggc ttt tct gag gag 204
 Lys Gly Gln Val Glu Tyr Leu Leu Lys Trp Lys Gly Phe Ser Glu Glu
 35 40 45
 cac aat act tgg gaa cct gag aag aac ttg gat tgt cct gaa cta att 252
 His Asn Thr Trp Glu Pro Glu Lys Asn Leu Asp Cys Pro Glu Leu Ile
 50 55 60
 tct gag ttt atg aaa aag tat aag aag atg aag gag ggt gaa aac aat 300

Ser Glu Phe Met Lys Lys Tyr Lys Lys Met Lys Glu Gly Glu Asn Asn
 65 70 75
 aag ccc agg gag aaa tca gaa gga aac aag agg aaa tcc agt ttc tcc 348
 Lys Pro Arg Glu Lys Ser Glu Gly Asn Lys Arg Lys Ser Ser Phe Ser
 80 85 90 95
 aac agc gct gat gat att aaa tct aaa aaa aag aga gag caa agc aat 396
 Asn Ser Ala Asp Asp Ile Lys Ser Lys Lys Lys Arg Glu Gln Ser Asn
 100 105 110
 gat atc gct cgg ggc ttt gag aga gga ctg gaa cca gaa aag atc atc 444
 Asp Ile Ala Arg Gly Phe Glu Arg Gly Leu Glu Pro Glu Lys Ile Ile
 115 120 125
 gga gca aca gat tcc tgc ggt gac tta atg ttc tta atg aaa tgg aaa 492
 Gly Ala Thr Asp Ser Cys Gly Asp Leu Met Phe Leu Met Lys Trp Lys
 130 135 140
 gac aca gat gaa gct gac ctg gtt ctt gca aaa gaa gct aac gtg aag 540
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 Cys Pro Gln Ile Val Ile Ala Phe Tyr Glu Glu Arg Leu Thr Trp His
 160 165 170 175
 gca tat cca gag gat gcg gaa aac aaa gaa aaa gaa agc gcg aag agc 636
 Ala Tyr Pro Glu Asp Ala Glu Asn Lys Glu Lys Glu Ser Ala Lys Ser
 180 185 190
 taa aggaggaggc agtctctgtc gtttctcttt gtatataata cctttacttt 689
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<210> 756

<211> 191

<212> PRT

<213> Mus musculus

<400> 756

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      35              40              45
Asn Thr Trp Glu Pro Glu Lys Asn Leu Asp Cys Pro Glu Leu Ile Ser
      50              55              60
Glu Phe Met Lys Lys Tyr Lys Lys Met Lys Glu Gly Glu Asn Asn Lys
      65              70              75              80
Pro Arg Glu Lys Ser Glu Gly Asn Lys Arg Lys Ser Ser Phe Ser Asn
      85              90              95
Ser Ala Asp Asp Ile Lys Ser Lys Lys Lys Arg Glu Gln Ser Asn Asp
      100             105             110
Ile Ala Arg Gly Phe Glu Arg Gly Leu Glu Pro Glu Lys Ile Ile Gly
      115             120             125
Ala Thr Asp Ser Cys Gly Asp Leu Met Phe Leu Met Lys Trp Lys Asp
      130             135             140
Thr Asp Glu Ala Asp Leu Val Leu Ala Lys Glu Ala Asn Val Lys Cys
      145             150             155             160
Pro Gln Ile Val Ile Ala Phe Tyr Glu Glu Arg Leu Thr Trp His Ala
      165             170             175
Tyr Pro Glu Asp Ala Glu Asn Lys Glu Lys Glu Ser Ala Lys Ser
      180             185             190

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<210> 757

<211> 394

<212> DNA

<213> Mus musculus

<400> 757

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aagtcctttc tttcgttccc tggactggca gatggctctt ttacagaagt accctcctcc 180
actgatcccc ccacgtggcg aggtgaatgg agctgacgct ttcgacattg gctcctttga 240
tgaggaggac acaaaggaat caagttactg gacagtgacc aggaaattgt accgcaaatt 300
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aacatcaatg gccggaacaa gacgggttgg aggc 394
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<210> 758

<211> 2348

<212> DNA

<213> Mus musculus

<400> 758

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tttgtaagga agaaggagg gctgagtgtc ccggaggcta gattcctccc ataccttagt 180
ggctctcggc ttgtcttggg ctggaaatcc attggttctc ctaccctggc taggttgtga 240
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cacagtgttg gatttgaata gccctgggtg cctagaactg cgtgacctct gttctcctcg 360
cctgaagctg ctgcagatgg atctgaccaa ggcagaggac atcagccgtg ttctggaaat 420
caccaaggcc cacacggcca gcactgggtc gcagatgtgt ctccattagg ggtgggcagg 480
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Lys Leu Glu Ser Ser Pro Glu Ser Leu Gly Leu Ser Phe Thr Met Pro			
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<213> Mus musculus

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Arg Leu Thr Ile Ser Tyr Leu Arg Val Arg Lys Leu Leu Asp Ala Gly

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Ala Gly Lys Arg Val Ile Glu Gln Thr Asp Lys Ala His Pro Arg Ser		
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Glu Leu Asn Pro Lys Thr Ile Ala Ser Gln Asn Ala Gln Arg Lys Arg		
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Lys Met Glu His Asp Gly Ser Leu Phe Gln Ala Ala Gly Ile Gly Thr		
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Leu Leu Gln Gln Pro Gly Asp Cys Ala Pro Thr Met Ser Leu Ser Trp		720
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Lys Arg Val Lys Gly Phe Ile Ser Ser Glu Gln Asn Gly Thr Glu Gln		
740	745	750

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Gln Val His Gln Arg Val His Ser Glu Asp Lys Pro Tyr Gln Cys Ala			
	315	320	325
gag tgt ggg agg ggc ttc act gta gag tca cac ctt caa gcg cac cag			1302

Glu Cys Gly Arg Gly Phe Thr Val Glu Ser His Leu Gln Ala His Gln
 330 335 340
 cgc tcc cac acg gga gag aga ccc tat caa tgt gag gag tgc ggg cga 1350
 Arg Ser His Thr Gly Glu Arg Pro Tyr Gln Cys Glu Glu Cys Gly Arg
 345 350 355 360
 ggc ttc tgt cgg gcc tcc aac ttt ctg gct cat cgt gga gtc cac aca 1398
 Gly Phe Cys Arg Ala Ser Asn Phe Leu Ala His Arg Gly Val His Thr
 365 370 375
 ggc gag aaa ccg tat cga tgt gac ata tgc gga aaa cgc ttc cgg cag 1446
 Gly Glu Lys Pro Tyr Arg Cys Asp Ile Cys Gly Lys Arg Phe Arg Gln
 380 385 390
 agg tcc tac ctc cat gac cac cac agg atc cac acg gga gag aaa cct 1494
 Arg Ser Tyr Leu His Asp His His Arg Ile His Thr Gly Glu Lys Pro
 395 400 405
 tac aaa tgt gag gag tgt ggg aaa gtc ttc agt tgg agc tca tac ctc 1542
 Tyr Lys Cys Glu Glu Cys Gly Lys Val Phe Ser Trp Ser Ser Tyr Leu
 410 415 420
 aag gcc cac cag aga gtt cac aca gga gag aaa cca tac aga tgt gag 1590
 Lys Ala His Gln Arg Val His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
 425 430 435 440
 gag tgt ggg aag ggt ttc agc tgg agc tca agt ctc cta att cac cag 1638
 Glu Cys Gly Lys Gly Phe Ser Trp Ser Ser Ser Leu Leu Ile His Gln
 445 450 455
 cgc gcc cat gca gag gat gag ggt cgc aag gat ttg cct gca tca gaa 1686
 Arg Ala His Ala Glu Asp Glu Gly Arg Lys Asp Leu Pro Ala Ser Glu
 460 465 470
 ggc tca cag ggg aaa caa act cta taa tgttttatag tttgatattt 1733
 Gly Ser Gln Gly Lys Gln Thr Leu
 475 480

caactggaag ctgaaaggtc ccaactctta gagttctcaa gggagttgta gtattagtat 1793
 tttagactgga ccaggatgca ttttgatgct tgggagacca caagcagaga agccttgtaa 1853
 gttggagcca tgtagacttc agtcagaacc ttgaccttta acacatggag acagtaacca 1913
 accgggggaa agttgagtgt gacctggagg tatctcaaag gaaggaacca gatacatttc 1973
 ttaatgttgct gggttgaacc ccgtgtgggg cttcattacc gtaagtgaca gtcacaagat 2033
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 tgtctatgac aaattgcatg gctttctaca gtacacatgc tttctgttct tccggaagcg 2273
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 ctcagtggga ttttgaccat cctcattact cccctttaca gaaagtgttc cagggcacta 2393
 ctgtgcaagt taggttttgt ggtaataaaa ttaccactta ctgaaattgt ttaaaatata 2453
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<210> 762

<211> 480

<212> PRT

<213> Mus musculus

<400> 762

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1				5					10				15		
Gly	Leu	Leu	Asp	Ala	Ala	Gln	Arg	Lys	Leu	Tyr	His	Asp	Val	Met	Leu
			20					25					30		
Glu	Asn	Phe	Arg	Met	Leu	Leu	Ser	Val	Gly	Asp	Lys	Asn	Pro	Glu	Glu
		35						40					45		
Met	Glu	Ser	Leu	Glu	Glu	Val	Gly	Leu	Arg	His	Leu	Ser	His	Glu	Ala
	50						55					60			
Leu	Phe	Cys	Ser	Gln	Ile	Trp	Gln	Gln	Val	Ser	Arg	Asp	Leu	Met	Lys

65	70	75	80
Ala Gly Asp Cys Arg Val Ser Ile Arg Glu Thr Gly Ser Pro Leu Lys			
85	90	95	
Arg Asp Asp Ala His Gly Ala Asp Arg Lys Tyr Ser Lys His Ser Gly			
100	105	110	
Gln Lys Pro Trp Leu Gln Leu His Cys Gly Thr Asp Gly Gly Glu Glu			
115	120	125	
Pro Tyr Arg Glu Glu Arg Ser Glu Lys Asp Ser Trp Asp Ser Pro Leu			
130	135	140	
Gln Ala Asn Gly Arg Pro Pro Ala Gly Glu Lys Arg Tyr Arg Cys Glu			
145	150	155	160
Lys Cys Asp His Ala Phe Cys Arg Leu Ser Gly Leu Gln Ala His Gln			
165	170	175	
Val Arg His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys			
180	185	190	
Gly Phe Thr Arg Ala Ser Thr Leu Leu Asp His Gln Arg Gly His Thr			
195	200	205	
Gly Asn Lys Pro Tyr Gln Cys His Ala Cys Trp Lys Ser Phe Cys His			
210	215	220	
Ser Ser Glu Phe Asn Asn His Ile Arg Val His Thr Gly Glu Lys Pro			
225	230	235	240
Tyr Val Cys Glu Glu Cys Gly Lys Gly Phe Ser Gln Ala Ser His Leu			
245	250	255	
Leu Ala His Gln Arg Gly His Thr Gly Glu Lys Pro Tyr Lys Cys Ser			
260	265	270	
Thr Cys Gly Lys Gly Phe Ser Arg Ser Ser Asp Leu Asn Val His Cys			
275	280	285	
Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Thr Cys Gly Lys			
290	295	300	

Ala Phe Ser Arg Val Ser Ile Leu Gln Val His Gln Arg Val His Ser
 305 310 315 320
 Glu Asp Lys Pro Tyr Gln Cys Ala Glu Cys Gly Arg Gly Phe Thr Val
 325 330 335
 Glu Ser His Leu Gln Ala His Gln Arg Ser His Thr Gly Glu Arg Pro
 340 345 350
 Tyr Gln Cys Glu Glu Cys Gly Arg Gly Phe Cys Arg Ala Ser Asn Phe
 355 360 365
 Leu Ala His Arg Gly Val His Thr Gly Glu Lys Pro Tyr Arg Cys Asp
 370 375 380
 Ile Cys Gly Lys Arg Phe Arg Gln Arg Ser Tyr Leu His Asp His His
 385 390 395 400
 Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys
 405 410 415
 Val Phe Ser Trp Ser Ser Tyr Leu Lys Ala His Gln Arg Val His Thr
 420 425 430
 Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Gly Phe Ser Trp
 435 440 445
 Ser Ser Ser Leu Leu Ile His Gln Arg Ala His Ala Glu Asp Glu Gly
 450 455 460
 Arg Lys Asp Leu Pro Ala Ser Glu Gly Ser Gln Gly Lys Gln Thr Leu
 465 470 475 480

<210> 763

<211> 3513

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (52).. (1464)

<400> 763

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Met Ser

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aca acg agt aag gag tca ctg gag agc aat ctg cga cag cta aaa tgc 105

Thr Thr Ser Lys Glu Ser Leu Glu Ser Asn Leu Arg Gln Leu Lys Cys

5

10

15

cat ttc acc tgg aac ctg ata gca gaa gat gag tcc ttg gat gag ttt 153

His Phe Thr Trp Asn Leu Ile Ala Glu Asp Glu Ser Leu Asp Glu Phe

20

25

30

gag gac agg gtg ttt aac aag gat gag ttt cag aac agt gag ttt aaa 201

Glu Asp Arg Val Phe Asn Lys Asp Glu Phe Gln Asn Ser Glu Phe Lys

35

40

45

50

gcc acc atg tgc aac ata ctg gcc tat gta aag cac tgc aga ggt cta 249

Ala Thr Met Cys Asn Ile Leu Ala Tyr Val Lys His Cys Arg Gly Leu

55

60

65

aat gag gca gca ctg caa tgc tta ggg gaa gct gag ggc ttc atc cag 297

Asn Glu Ala Ala Leu Gln Cys Leu Gly Glu Ala Glu Gly Phe Ile Gln

70

75

80

caa cag cat cct gac caa gta gaa atc aga agt ctg gtc acc tgg gga 345

Gln Gln His Pro Asp Gln Val Glu Ile Arg Ser Leu Val Thr Trp Gly

85

90

95

aac tat gct tgg gtc tac tat cac atg ggc cag ttc tca aag gct cag 393

Asn Tyr Ala Trp Val Tyr Tyr His Met Gly Gln Phe Ser Lys Ala Gln

100

105

110

gct tat ctg gat aaa gtg aaa cag gtc tgc aag aag ttt tcc agc ccc 441

Ala Tyr Leu Asp Lys Val Lys Gln Val Cys Lys Lys Phe Ser Ser Pro	
115	120
125	130
tac agg att gag aat cct gct ctt gac tgt gag gag ggg tgg gcc cga	489
Tyr Arg Ile Glu Asn Pro Ala Leu Asp Cys Glu Glu Gly Trp Ala Arg	
135	140
145	
tta aag tgt acc aag aac caa aac gag aga gtg aag gtg tgt ttc cag	537
Leu Lys Cys Thr Lys Asn Gln Asn Glu Arg Val Lys Val Cys Phe Gln	
150	155
160	
aag gct ctg gaa aag gac ccg aag aac cca gaa ttc acc tct gga tgg	585
Lys Ala Leu Glu Lys Asp Pro Lys Asn Pro Glu Phe Thr Ser Gly Trp	
165	170
175	
gcc att gcg aac tac cgt ctg gat gac tgg cca gca agg aat tac tgc	633
Ala Ile Ala Asn Tyr Arg Leu Asp Asp Trp Pro Ala Arg Asn Tyr Cys	
180	185
190	
att gac tct ctg gag caa gcc att caa ctg tct cct gac aac act tat	681
Ile Asp Ser Leu Glu Gln Ala Ile Gln Leu Ser Pro Asp Asn Thr Tyr	
195	200
205	210
gtt aaa gtc ctc ttg gca ctg aag ctt gac gcg gta cat aaa aac caa	729
Val Lys Val Leu Leu Ala Leu Lys Leu Asp Ala Val His Lys Asn Gln	
215	220
225	
gca atg gcg ctg gtt gaa gaa gcc tta aag aaa gac cca agt gca ata	777
Ala Met Ala Leu Val Glu Glu Ala Leu Lys Lys Asp Pro Ser Ala Ile	
230	235
240	
gat aca ctc ctc agg gca gcc agg ttt tat tgc aag gta tat gac aca	825
Asp Thr Leu Leu Arg Ala Ala Arg Phe Tyr Cys Lys Val Tyr Asp Thr	
245	250
255	
gac aga gct ata cag ttg ctt aga aag gct ttg gaa aag ctg cca aac	873
Asp Arg Ala Ile Gln Leu Leu Arg Lys Ala Leu Glu Lys Leu Pro Asn	
260	265
270	

aac gcc tat gtg cat tac tat atg ggg tgc tgt tat agg tca aaa gtc 921
 Asn Ala Tyr Val His Tyr Tyr Met Gly Cys Cys Tyr Arg Ser Lys Val
 275 280 285 290
 cat cat atg ttg aac aga agg gaa atg gta ttt agt ggg gat agg aag 969
 His His Met Leu Asn Arg Arg Glu Met Val Phe Ser Gly Asp Arg Lys
 295 300 305
 aag tta gag gaa cta ata caa ctg gca gtg aat cac tta cgg aaa gca 1017
 Lys Leu Glu Glu Leu Ile Gln Leu Ala Val Asn His Leu Arg Lys Ala
 310 315 320
 gag gaa atc aag gag atg ctt gaa tat tcc tgt agc ttc ctt gct gat 1065
 Glu Glu Ile Lys Glu Met Leu Glu Tyr Ser Cys Ser Phe Leu Ala Asp
 325 330 335
 ctt tat atc ata gca aaa aag tat gac gaa gcc gat tac tac ttc cag 1113
 Leu Tyr Ile Ile Ala Lys Lys Tyr Asp Glu Ala Asp Tyr Tyr Phe Gln
 340 345 350
 aaa gaa ttg agc aag gac ctc cct cct ggc cct aaa cag tta ctc cac 1161
 Lys Glu Leu Ser Lys Asp Leu Pro Pro Gly Pro Lys Gln Leu Leu His
 355 360 365 370
 ctt cgg tat ggc aac ttt cag ttt ttt caa atg aag cgt caa gac aag 1209
 Leu Arg Tyr Gly Asn Phe Gln Phe Phe Gln Met Lys Arg Gln Asp Lys
 375 380 385
 gct atc tac cat tat atg gag ggt gtg aaa ata aag aag aaa aca atc 1257
 Ala Ile Tyr His Tyr Met Glu Gly Val Lys Ile Lys Lys Lys Thr Ile
 390 395 400
 ccc caa aaa aag atg aga gag aaa ctt caa aga att gcc cta agg cgg 1305
 Pro Gln Lys Lys Met Arg Glu Lys Leu Gln Arg Ile Ala Leu Arg Arg
 405 410 415
 ctt cat gaa gat gag tct gat tct gag gcc ttg cat atc ttg gca ttt 1353
 Leu His Glu Asp Glu Ser Asp Ser Glu Ala Leu His Ile Leu Ala Phe

420 425 430
 ctt cag gag aat gga gga ggt cag caa gct gat aaa gac tct gag agg 1401
 Leu Gln Glu Asn Gly Gly Gly Gln Gln Ala Asp Lys Asp Ser Glu Arg
 435 440 445 450
 gga gtg gac tct gca aac cag gta cct tca gca tct ttg gat gaa gca 1449
 Gly Val Asp Ser Ala Asn Gln Val Pro Ser Ala Ser Leu Asp Glu Ala
 455 460 465
 ggt gct gaa tac tag tgatgtggta cccggcctac tgctggaagg aaaaagaaag 1504
 Gly Ala Glu Tyr
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 aagttgtggg accaagtcac tcttccaatt accagccagt tctcaatcta tgggtgtcca 2524
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ctccaggag tcgcatggga agatgtctcc ctactctgcc ctccctagaac tatatagttg 2704
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 ttcacattt gaatttctgg aaaaataata aacttgttt ataagtaaca cataatgiaa 3424
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 tactgataat aaagagtgca ttaactgtt 3513

<210> 764

<211> 470

<212> PRT

<213> Mus musculus

<400> 764

Met Ser Thr Thr Ser Lys Glu Ser Leu Glu Ser Asn Leu Arg Gln Leu
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Lys Cys His Phe Thr Trp Asn Leu Ile Ala Glu Asp Glu Ser Leu Asp
 20 25 30

Glu Phe Glu Asp Arg Val Phe Asn Lys Asp Glu Phe Gln Asn Ser Glu
 35 40 45

Phe Lys Ala Thr Met Cys Asn Ile Leu Ala Tyr Val Lys His Cys Arg

50	55	60
Gly Leu Asn Glu Ala Ala Leu Gln Cys Leu Gly Glu Ala Glu Gly Phe		
65	70	75
Ile Gln Gln Gln His Pro Asp Gln Val Glu Ile Arg Ser Leu Val Thr		80
	85	90
Trp Gly Asn Tyr Ala Trp Val Tyr Tyr His Met Gly Gln Phe Ser Lys		95
	100	105
Ala Gln Ala Tyr Leu Asp Lys Val Lys Gln Val Cys Lys Lys Phe Ser		110
	115	120
Ser Pro Tyr Arg Ile Glu Asn Pro Ala Leu Asp Cys Glu Glu Gly Trp		125
	130	135
Ala Arg Leu Lys Cys Thr Lys Asn Gln Asn Glu Arg Val Lys Val Cys		140
145	150	155
Phe Gln Lys Ala Leu Glu Lys Asp Pro Lys Asn Pro Glu Phe Thr Ser		160
	165	170
Gly Trp Ala Ile Ala Asn Tyr Arg Leu Asp Asp Trp Pro Ala Arg Asn		175
	180	185
Tyr Cys Ile Asp Ser Leu Glu Gln Ala Ile Gln Leu Ser Pro Asp Asn		190
	195	200
Thr Tyr Val Lys Val Leu Leu Ala Leu Lys Leu Asp Ala Val His Lys		205
	210	215
Asn Gln Ala Met Ala Leu Val Glu Glu Ala Leu Lys Lys Asp Pro Ser		220
225	230	235
Ala Ile Asp Thr Leu Leu Arg Ala Ala Arg Phe Tyr Cys Lys Val Tyr		240
	245	250
Asp Thr Asp Arg Ala Ile Gln Leu Leu Arg Lys Ala Leu Glu Lys Leu		255
	260	265
Pro Asn Asn Ala Tyr Val His Tyr Tyr Met Gly Cys Cys Tyr Arg Ser		270
	275	280
		285

Lys Val His His Met Leu Asn Arg Arg Glu Met Val Phe Ser Gly Asp
 290 295 300
 Arg Lys Lys Leu Glu Glu Leu Ile Gln Leu Ala Val Asn His Leu Arg
 305 310 315 320
 Lys Ala Glu Glu Ile Lys Glu Met Leu Glu Tyr Ser Cys Ser Phe Leu
 325 330 335
 Ala Asp Leu Tyr Ile Ile Ala Lys Lys Tyr Asp Glu Ala Asp Tyr Tyr
 340 345 350
 Phe Gln Lys Glu Leu Ser Lys Asp Leu Pro Pro Gly Pro Lys Gln Leu
 355 360 365
 Leu His Leu Arg Tyr Gly Asn Phe Gln Phe Phe Gln Met Lys Arg Gln
 370 375 380
 Asp Lys Ala Ile Tyr His Tyr Met Glu Gly Val Lys Ile Lys Lys Lys
 385 390 395 400
 Thr Ile Pro Gln Lys Lys Met Arg Glu Lys Leu Gln Arg Ile Ala Leu
 405 410 415
 Arg Arg Leu His Glu Asp Glu Ser Asp Ser Glu Ala Leu His Ile Leu
 420 425 430
 Ala Phe Leu Gln Glu Asn Gly Gly Gly Gln Gln Ala Asp Lys Asp Ser
 435 440 445
 Glu Arg Gly Val Asp Ser Ala Asn Gln Val Pro Ser Ala Ser Leu Asp
 450 455 460
 Glu Ala Gly Ala Glu Tyr
 465 470

<210> 765

<211> 3447

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (206).. (2983)

<400> 765

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gcgccaagac ctgctggctt ctcggagcgc tgcctcggag gggactgcga gaaggccgag 180
ccccgggcgc cggcggctcg ggaac atg gcg gcg tgc atc ggg gag agg atc 232

Met Ala Ala Cys Ile Gly Glu Arg Ile

1

5

gag gac ttt aag gtt gga aat cta ctc ggt aaa gga tca ttt gct ggt 280
Glu Asp Phe Lys Val Gly Asn Leu Leu Gly Lys Gly Ser Phe Ala Gly
10 15 20 25

gtc tac aga gct gag tcc ata cac act ggt ttg gaa gtt gca atc aaa 328
Val Tyr Arg Ala Glu Ser Ile His Thr Gly Leu Glu Val Ala Ile Lys

30

35

40

atg ata gat aag aaa gcc atg tac aaa gct gga atg gta cag aga gtc 376
Met Ile Asp Lys Lys Ala Met Tyr Lys Ala Gly Met Val Gln Arg Val

45

50

55

caa aat gag gtg aaa ata cat tgc cag ttg aaa cac ccc tct gtc ttg 424
Gln Asn Glu Val Lys Ile His Cys Gln Leu Lys His Pro Ser Val Leu

60

65

70

gag ctc tat aat tac ttt gaa gat aac aat tat gtc tac ctg gta ttg 472
Glu Leu Tyr Asn Tyr Phe Glu Asp Asn Asn Tyr Val Tyr Leu Val Leu

75

80

85

gaa atg tgc cac aat gga gaa atg aac aga tat ctg aag aac aga atg 520
Glu Met Cys His Asn Gly Glu Met Asn Arg Tyr Leu Lys Asn Arg Met

90	95	100	105	
aag cct ttc tca gaa agg gaa gct agg cac ttc atg cac cag att atc				568
Lys Pro Phe Ser Glu Arg Glu Ala Arg His Phe Met His Gln Ile Ile				
	110	115	120	
aca gga atg tta tat ctt cat tct cat ggc ata ttg cac cgg gac ctc				616
Thr Gly Met Leu Tyr Leu His Ser His Gly Ile Leu His Arg Asp Leu				
	125	130	135	
aca ctc tct aac atc tta ctt acg cgg aat atg aac ata aaa att gct				664
Thr Leu Ser Asn Ile Leu Leu Thr Arg Asn Met Asn Ile Lys Ile Ala				
	140	145	150	
gac ttt gga cta gca acg cag ttg aat atg cca cat gaa aag cac tat				712
Asp Phe Gly Leu Ala Thr Gln Leu Asn Met Pro His Glu Lys His Tyr				
	155	160	165	
aca ctc tgt ggg act cct aat tat att tca cca gaa att gca act cga				760
Thr Leu Cys Gly Thr Pro Asn Tyr Ile Ser Pro Glu Ile Ala Thr Arg				
	170	175	180	185
agt gca cat gga ctt gaa tct gat att tgg tca ttg ggc tgt atg tct				808
Ser Ala His Gly Leu Glu Ser Asp Ile Trp Ser Leu Gly Cys Met Ser				
	190	195	200	
tat acg tta ctt att gga aga cca cct ttt gac act gac aca gtc aag				856
Tyr Thr Leu Leu Ile Gly Arg Pro Pro Phe Asp Thr Asp Thr Val Lys				
	205	210	215	
aac aca ttg aac aaa gta gtc ctg gca gat tat gaa atg cca gcc ttt				904
Asn Thr Leu Asn Lys Val Val Leu Ala Asp Tyr Glu Met Pro Ala Phe				
	220	225	230	
ttg tca cga gag gcc cag gac ctt atc cac cag tta ctt cgt aga aac				952
Leu Ser Arg Glu Ala Gln Asp Leu Ile His Gln Leu Leu Arg Arg Asn				
	235	240	245	
cct gca gat cgg tta agt ctg tct tct gtg ttg gac cat cct ttc atg				1000

Pro Ala Asp Arg Leu Ser Leu Ser Ser Val Leu Asp His Pro Phe Met
 250 255 260 265
 tca cga aat cct tca cca aag agt aaa gac gta ggg act gta gag gac 1048
 Ser Arg Asn Pro Ser Pro Lys Ser Lys Asp Val Gly Thr Val Glu Asp
 270 275 280
 tca atg gat agt ggg cat gct aca ctt tcc aca aca att aca gcc tct 1096
 Ser Met Asp Ser Gly His Ala Thr Leu Ser Thr Thr Ile Thr Ala Ser
 285 290 295
 tct ggt acc agt ttg agt ggc agc cta ctt gac aga aga ctt ttg gtt 1144
 Ser Gly Thr Ser Leu Ser Gly Ser Leu Leu Asp Arg Arg Leu Leu Val
 300 305 310
 ggt caa cca ctt cca aat aaa att act gta ttt caa aaa aat aaa aat 1192
 Gly Gln Pro Leu Pro Asn Lys Ile Thr Val Phe Gln Lys Asn Lys Asn
 315 320 325
 tca agt gac ttt tct tca gga gat gga agt aat ttt tgt act caa tgg 1240
 Ser Ser Asp Phe Ser Ser Gly Asp Gly Ser Asn Phe Cys Thr Gln Trp
 330 335 340 345
 gga aat cca gaa caa gaa gct aat agt agg gga cgg ggg aga gtg att 1288
 Gly Asn Pro Glu Gln Glu Ala Asn Ser Arg Gly Arg Gly Arg Val Ile
 350 355 360
 gaa gat gca gaa gag agg ccg cat tct cga tac ctg cgc aga gct cat 1336
 Glu Asp Ala Glu Glu Arg Pro His Ser Arg Tyr Leu Arg Arg Ala His
 365 370 375
 tcc tct gat aga gcc agc ccc tct aat cag tct cga gca aaa aca tac 1384
 Ser Ser Asp Arg Ala Ser Pro Ser Asn Gln Ser Arg Ala Lys Thr Tyr
 380 385 390
 tca gta gaa cgt tgt cac tca gta gaa atg ctt tca aag cct aga aga 1432
 Ser Val Glu Arg Cys His Ser Val Glu Met Leu Ser Lys Pro Arg Arg
 395 400 405

tca ctg gat gaa aat caa cac agt tcc aat cat cat tgt cta gga aaa	1480
Ser Leu Asp Glu Asn Gln His Ser Ser Asn His His Cys Leu Gly Lys	
410 415 420 425	
act cct ttt cca ttt gca gac cag aca cct cag atg gaa atg gta cag	1528
Thr Pro Phe Pro Phe Ala Asp Gln Thr Pro Gln Met Glu Met Val Gln	
430 435 440	
cag tgg ttt ggg aat ctg caa atg aat gct cat tta gga gaa act aat	1576
Gln Trp Phe Gly Asn Leu Gln Met Asn Ala His Leu Gly Glu Thr Asn	
445 450 455	
gag cac cac acc gtt agc cca aac aga gat ttc cag gac tat cca gat	1624
Glu His His Thr Val Ser Pro Asn Arg Asp Phe Gln Asp Tyr Pro Asp	
460 465 470	
ttg cag gac acg tta cga aac gct tgg act gac acg aga gcc agc aag	1672
Leu Gln Asp Thr Leu Arg Asn Ala Trp Thr Asp Thr Arg Ala Ser Lys	
475 480 485	
aat gct gat act tct gcc aat gtt cat gct gta aag cag ctg agt gcc	1720
Asn Ala Asp Thr Ser Ala Asn Val His Ala Val Lys Gln Leu Ser Ala	
490 495 500 505	
atg aaa tac atg agt gca cat cac cat aag cct gag gtc atg cca cag	1768
Met Lys Tyr Met Ser Ala His His His Lys Pro Glu Val Met Pro Gln	
510 515 520	
gag ccg ggc cta cat cct cat tct gaa caa agc aag aat aga agt atg	1816
Glu Pro Gly Leu His Pro His Ser Glu Gln Ser Lys Asn Arg Ser Met	
525 530 535	
gag tcg aca ctg ggt tac cag aaa cct acc tta aga agt att aca tct	1864
Glu Ser Thr Leu Gly Tyr Gln Lys Pro Thr Leu Arg Ser Ile Thr Ser	
540 545 550	
cct ctg att gct cac aga tta aag cca atc aga cag aaa acc aaa aag	1912
Pro Leu Ile Ala His Arg Leu Lys Pro Ile Arg Gln Lys Thr Lys Lys	

555	560	565	
gct gtg gtg agc atc ctt gat tca gag gag gtg tgt gtg gag ctt ctg			1960
Ala Val Val Ser Ile Leu Asp Ser Glu Glu Val Cys Val Glu Leu Leu			
570	575	580	585
aga gag tgt gcg tct gaa gga tat gtg aaa gaa gtg ctt cag ata tcg			2008
Arg Glu Cys Ala Ser Glu Gly Tyr Val Lys Glu Val Leu Gln Ile Ser			
	590	595	600
agt gat ggg act atg atc act gtt tat tac ccg aac gat gga aga ggc			2056
Ser Asp Gly Thr Met Ile Thr Val Tyr Tyr Pro Asn Asp Gly Arg Gly			
	605	610	615
ttt cct ctt gct gac aga cct ccc ttg cct act gac aac atc agt agg			2104
Phe Pro Leu Ala Asp Arg Pro Pro Leu Pro Thr Asp Asn Ile Ser Arg			
	620	625	630
tac agc ttt gac aat cta cca gaa aaa tac tgg cgg aaa tat cag tat			2152
Tyr Ser Phe Asp Asn Leu Pro Glu Lys Tyr Trp Arg Lys Tyr Gln Tyr			
635	640	645	
gct tcc aga ttc att cag cta gta aga tct aaa act ccc aaa atc act			2200
Ala Ser Arg Phe Ile Gln Leu Val Arg Ser Lys Thr Pro Lys Ile Thr			
650	655	660	665
tat ttt aca aga tat gct aaa tgt att ttg atg gaa aat tct cct ggt			2248
Tyr Phe Thr Arg Tyr Ala Lys Cys Ile Leu Met Glu Asn Ser Pro Gly			
	670	675	680
gct gat ttc gaa gtt tgg ttt tat gat gga gcc aaa ata cat aaa act			2296
Ala Asp Phe Glu Val Trp Phe Tyr Asp Gly Ala Lys Ile His Lys Thr			
	685	690	695
gaa aat tta att cac ata att gag aaa aca ggg ata tct tat aat tta			2344
Glu Asn Leu Ile His Ile Ile Glu Lys Thr Gly Ile Ser Tyr Asn Leu			
700	705	710	
aaa aat gaa aat gaa gtt acc agc ctg aaa gag gaa gta aaa gta tat			2392

Lys Asn Glu Asn Glu Val Thr Ser Leu Lys Glu Glu Val Lys Val Tyr
 715 720 725
 atg gac cat gct aat gag ggt cac cgt att tgc ttg tca ctg gaa tct 2440
 Met Asp His Ala Asn Glu Gly His Arg Ile Cys Leu Ser Leu Glu Ser
 730 735 740 745
 gta atc tct gag gag gaa aag aga agc agg ggt tct tca ttc ttc cct 2488
 Val Ile Ser Glu Glu Glu Lys Arg Ser Arg Gly Ser Ser Phe Phe Pro
 750 755 760
 ata atc gta gga aga aaa cct ggt aat act agt tca cct aaa gcc tta 2536
 Ile Ile Val Gly Arg Lys Pro Gly Asn Thr Ser Ser Pro Lys Ala Leu
 765 770 775
 tca gct cct cct gtg gac cca agc tgc tgt aag gga gag cag gcg tca 2584
 Ser Ala Pro Pro Val Asp Pro Ser Cys Cys Lys Gly Glu Gln Ala Ser
 780 785 790
 gca agc aga ctg agc gtg aat agt gcc gct ttc ccc aca cag tcc cca 2632
 Ala Ser Arg Leu Ser Val Asn Ser Ala Ala Phe Pro Thr Gln Ser Pro
 795 800 805
 gga ctg agt cct tcc act gtg aca gtt gaa gga ctt ggc cac aca gcg 2680
 Gly Leu Ser Pro Ser Thr Val Thr Val Glu Gly Leu Gly His Thr Ala
 810 815 820 825
 act gcc aca gga aca ggc gtc tct tca agt ctt cct aaa tct gca cag 2728
 Thr Ala Thr Gly Thr Gly Val Ser Ser Ser Leu Pro Lys Ser Ala Gln
 830 835 840
 ctt ttg aaa tct gtt ttt gtg aaa aat gtt ggt tgg gct aca cag cta 2776
 Leu Leu Lys Ser Val Phe Val Lys Asn Val Gly Trp Ala Thr Gln Leu
 845 850 855
 act agc gga gct gtg tgg gtt cag ttt aat gat ggg tca cag ttg gtt 2824
 Thr Ser Gly Ala Val Trp Val Gln Phe Asn Asp Gly Ser Gln Leu Val
 860 865 870

gtc cag gca gga gta tct tcc atc agt tac aca tca cca gat ggt cag 2872
 Val Gln Ala Gly Val Ser Ser Ile Ser Tyr Thr Ser Pro Asp Gly Gln
 875 880 885
 aca act agg tat gga gaa aat gaa aaa tta cct gaa tac atc aaa cag 2920
 Thr Thr Arg Tyr Gly Glu Asn Glu Lys Leu Pro Glu Tyr Ile Lys Gln
 890 895 900 905
 aaa tta cag tgt ctt tct tcc atc ctt ctg atg ttt tct aat cca act 2968
 Lys Leu Gln Cys Leu Ser Ser Ile Leu Leu Met Phe Ser Asn Pro Thr
 910 915 920
 cct aat ttt cag taa ttttaagtcctc agaagtcctat atttaataaaa tgactttttg 3023
 Pro Asn Phe Gln
 925
 gctggcctttc aagtaagiga ttttttaaatt ttactttaac ttcagaaagc ctttctatta 3083
 aacagaatttt taatatacac aataaaaata taataagaaa acaataaaaat ttcagttacc 3143
 taatatagtg gtcataaggc taggacatct aattttgctc caagcatgta atccttcaaa 3203
 gtttgtgctc ctatgtttgt attgaactaa gtttgttatg gcttgtttgt ttttgttatt 3263
 ttctttacta alaagacatt gagaatcacg gacaaaacat agttttcaat ttttgaatgt 3323
 gtaaataatg tattataagc aatatgtaaa tgtgtatatt ttatatitat ttttatagca 3383
 ctttgtctcg ataagatttc tgcaaataca ttttataaaa taaacacagt ggtaagtttt 3443
 cctt 3447

<210> 766

<211> 925

<212> PRT

<213> Mus musculus

<400> 766

Met Ala Ala Cys Ile Gly Glu Arg Ile Glu Asp Phe Lys Val Gly Asn

1

5

10

15

Leu Leu Gly Lys Gly Ser Phe Ala Gly Val Tyr Arg Ala Glu Ser Ile
 20 25 30
 His Thr Gly Leu Glu Val Ala Ile Lys Met Ile Asp Lys Lys Ala Met
 35 40 45
 Tyr Lys Ala Gly Met Val Gln Arg Val Gln Asn Glu Val Lys Ile His
 50 55 60
 Cys Gln Leu Lys His Pro Ser Val Leu Glu Leu Tyr Asn Tyr Phe Glu
 65 70 75 80
 Asp Asn Asn Tyr Val Tyr Leu Val Leu Glu Met Cys His Asn Gly Glu
 85 90 95
 Met Asn Arg Tyr Leu Lys Asn Arg Met Lys Pro Phe Ser Glu Arg Glu
 100 105 110
 Ala Arg His Phe Met His Gln Ile Ile Thr Gly Met Leu Tyr Leu His
 115 120 125
 Ser His Gly Ile Leu His Arg Asp Leu Thr Leu Ser Asn Ile Leu Leu
 130 135 140
 Thr Arg Asn Met Asn Ile Lys Ile Ala Asp Phe Gly Leu Ala Thr Gln
 145 150 155 160
 Leu Asn Met Pro His Glu Lys His Tyr Thr Leu Cys Gly Thr Pro Asn
 165 170 175
 Tyr Ile Ser Pro Glu Ile Ala Thr Arg Ser Ala His Gly Leu Glu Ser
 180 185 190
 Asp Ile Trp Ser Leu Gly Cys Met Ser Tyr Thr Leu Leu Ile Gly Arg
 195 200 205
 Pro Pro Phe Asp Thr Asp Thr Val Lys Asn Thr Leu Asn Lys Val Val
 210 215 220
 Leu Ala Asp Tyr Glu Met Pro Ala Phe Leu Ser Arg Glu Ala Gln Asp
 225 230 235 240
 Leu Ile His Gln Leu Leu Arg Arg Asn Pro Ala Asp Arg Leu Ser Leu

245	250	255
Ser Ser Val Leu Asp His Pro Phe Met Ser Arg Asn Pro Ser Pro Lys		
260	265	270
Ser Lys Asp Val Gly Thr Val Glu Asp Ser Met Asp Ser Gly His Ala		
275	280	285
Thr Leu Ser Thr Thr Ile Thr Ala Ser Ser Gly Thr Ser Leu Ser Gly		
290	295	300
Ser Leu Leu Asp Arg Arg Leu Leu Val Gly Gln Pro Leu Pro Asn Lys		
305	310	315
Ile Thr Val Phe Gln Lys Asn Lys Asn Ser Ser Asp Phe Ser Ser Gly		
325	330	335
Asp Gly Ser Asn Phe Cys Thr Gln Trp Gly Asn Pro Glu Gln Glu Ala		
340	345	350
Asn Ser Arg Gly Arg Gly Arg Val Ile Glu Asp Ala Glu Glu Arg Pro		
355	360	365
His Ser Arg Tyr Leu Arg Arg Ala His Ser Ser Asp Arg Ala Ser Pro		
370	375	380
Ser Asn Gln Ser Arg Ala Lys Thr Tyr Ser Val Glu Arg Cys His Ser		
385	390	395
Val Glu Met Leu Ser Lys Pro Arg Arg Ser Leu Asp Glu Asn Gln His		
405	410	415
Ser Ser Asn His His Cys Leu Gly Lys Thr Pro Phe Pro Phe Ala Asp		
420	425	430
Gln Thr Pro Gln Met Glu Met Val Gln Gln Trp Phe Gly Asn Leu Gln		
435	440	445
Met Asn Ala His Leu Gly Glu Thr Asn Glu His His Thr Val Ser Pro		
450	455	460
Asn Arg Asp Phe Gln Asp Tyr Pro Asp Leu Gln Asp Thr Leu Arg Asn		
465	470	475
		480

Ala Trp Thr Asp Thr Arg Ala Ser Lys Asn Ala Asp Thr Ser Ala Asn
 485 490 495
 Val His Ala Val Lys Gln Leu Ser Ala Met Lys Tyr Met Ser Ala His
 500 505 510
 His His Lys Pro Glu Val Met Pro Gln Glu Pro Gly Leu His Pro His
 515 520 525
 Ser Glu Gln Ser Lys Asn Arg Ser Met Glu Ser Thr Leu Gly Tyr Gln
 530 535 540
 Lys Pro Thr Leu Arg Ser Ile Thr Ser Pro Leu Ile Ala His Arg Leu
 545 550 555 560
 Lys Pro Ile Arg Gln Lys Thr Lys Lys Ala Val Val Ser Ile Leu Asp
 565 570 575
 Ser Glu Glu Val Cys Val Glu Leu Leu Arg Glu Cys Ala Ser Glu Gly
 580 585 590
 Tyr Val Lys Glu Val Leu Gln Ile Ser Ser Asp Gly Thr Met Ile Thr
 595 600 605
 Val Tyr Tyr Pro Asn Asp Gly Arg Gly Phe Pro Leu Ala Asp Arg Pro
 610 615 620
 Pro Leu Pro Thr Asp Asn Ile Ser Arg Tyr Ser Phe Asp Asn Leu Pro
 625 630 635 640
 Glu Lys Tyr Trp Arg Lys Tyr Gln Tyr Ala Ser Arg Phe Ile Gln Leu
 645 650 655
 Val Arg Ser Lys Thr Pro Lys Ile Thr Tyr Phe Thr Arg Tyr Ala Lys
 660 665 670
 Cys Ile Leu Met Glu Asn Ser Pro Gly Ala Asp Phe Glu Val Trp Phe
 675 680 685
 Tyr Asp Gly Ala Lys Ile His Lys Thr Glu Asn Leu Ile His Ile Ile
 690 695 700
 Glu Lys Thr Gly Ile Ser Tyr Asn Leu Lys Asn Glu Asn Glu Val Thr

705	710	715	720
Ser Leu Lys Glu Glu Val Lys Val Tyr Met Asp His Ala Asn Glu Gly			
725	730	735	
His Arg Ile Cys Leu Ser Leu Glu Ser Val Ile Ser Glu Glu Glu Lys			
740	745	750	
Arg Ser Arg Gly Ser Ser Phe Phe Pro Ile Ile Val Gly Arg Lys Pro			
755	760	765	
Gly Asn Thr Ser Ser Pro Lys Ala Leu Ser Ala Pro Pro Val Asp Pro			
770	775	780	
Ser Cys Cys Lys Gly Glu Gln Ala Ser Ala Ser Arg Leu Ser Val Asn			
785	790	795	800
Ser Ala Ala Phe Pro Thr Gln Ser Pro Gly Leu Ser Pro Ser Thr Val			
805	810	815	
Thr Val Glu Gly Leu Gly His Thr Ala Thr Ala Thr Gly Thr Gly Val			
820	825	830	
Ser Ser Ser Leu Pro Lys Ser Ala Gln Leu Leu Lys Ser Val Phe Val			
835	840	845	
Lys Asn Val Gly Trp Ala Thr Gln Leu Thr Ser Gly Ala Val Trp Val			
850	855	860	
Gln Phe Asn Asp Gly Ser Gln Leu Val Val Gln Ala Gly Val Ser Ser			
865	870	875	880
Ile Ser Tyr Thr Ser Pro Asp Gly Gln Thr Thr Arg Tyr Gly Glu Asn			
885	890	895	
Glu Lys Leu Pro Glu Tyr Ile Lys Gln Lys Leu Gln Cys Leu Ser Ser			
900	905	910	
Ile Leu Leu Met Phe Ser Asn Pro Thr Pro Asn Phe Gln			
915	920	925	

<210> 767

<211> 772

<212> DNA

<213> *Mus musculus*

<400> 767

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 tctaaacggg ccctgagatt tctgactcct gcctctcttg tttctaggga aaatgctcaa 120
 catccacca tcttgctcc ctccctttta gggttcaa gcccacgagc aagtcctgga 180
 agctggagtc acaatcactg ggtgtaccgt acactttgtc gctgtgagta tgtctgtccc 240
 taccaagcct ttgacctagc tagcgtctgg ctgccgtcta cactggccgg aaagggtgaa 300
 aacgtttgct tccctttcca ggaagatgta gatgccggac aaatcatcct gcaggaagct 360
 gtccctgtgc ggaggggtga cactgtggca acgctgtctg aacgggtcaa agtggcagaa 420
 cataagatct ttctgcccgc tcttcagctg gtggccagcg gggctgtgca gctgcgagaa 480
 gatggcaaga tccactgggc caaggagcag tgaccggctc tgaatgcagga gtgggctcag 540
 tgctgagaga gaggcagggc ctgtctgggt gccttttcat catgaccatg gccaaactga 600
 aatacctgct ggcaaaaaga ctttaatcct taccgctgc cttttttta ataaataggt 660
 tcattgaaaa gaaaacttat ctacgattta ttaagacat ccagaagtgg aaagttctag 720
 gccgccaaca tcttgggcac ctacgaaccc agacgagaga tctccaagcc tt 772

<210> 768

<211> 267

<212> DNA

<213> *Mus musculus*

<400> 768

acaatgccag tctttcactc agagacagca cctgccctcg agcgcatact gagtatcagt 60
 gctgatattg agacgattgg agaaattctg aagaaaatca tcttaccttg caagagggcc 120
 tgcagttgcc atcactcact gcaaccagcc agctcccgtc cgaatctgat ggtgtggaat 180
 gcttaaatta cccacattat aaacggacgt cgactttcat tgcgacgtgg agactgtttg 240

actgatcacg agtatgcgca ggacgaa

267

<210> 769

<211> 473

<212> DNA

<213> Mus musculus

<400> 769

cacaggcgct ttccgaggcg gccttcctac tcgtgtggc ttgtgactt ccaccatggc 60
gtacccggcc agggcaaaag gtgcagaagg tgatggigca gccatcaacc ttaicctcag 120
atacttgcaa aatagatctc gaattcaggt gtggctgtat gaacaagtga atatgcggat 180
agaaggttgt attattggct ttgatgagta catgaacctc gtattagatg atgcagaaga 240
gattcattct aaaacaaagt caagaaaaca actgggtcgg atcatgctaa aaggagatga 300
tattactctg ctctcaagt gtgtcccaat ctagcagtga atggigaagt ctgtaggatg 360
ttgagaagac cccttgagcg tgtttaaaga tgtctgtgc aacctgcatt tactcaacag 420
gtnttacttg cacattatta ttaggtgaca ataaatgctg taggaagttc ttg 473

<210> 770

<211> 689

<212> DNA

<213> Mus musculus

<400> 770

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cgcgccccgc antctccgag cgcggctcga tcggcgcacg tgcccaagag cccgcgggtc 120
gagcggctcg cgggtcagat tttcttaat cctctgagga ctctggaaaa caggatggct 180
gcaaacaagc ccaagggtca gaattctttg gccttacaca aagtcacat ggtgggcagt 240
ggtgggtgtg gcaagtctgc cctgactctg cagttcatgt acgacgagtt ttagaggac 300
tatgaacctc ccaaagcgga cagctacagg aagaaggtag tcctggacgg ggaagaagtg 360

cagatcgaca tcttagatac agcggggcag gaggactatg ctgcaattag agacaactac 420
 ttccgaagtg gggagggatt ctctgtgtct tctctatcac agagatggag tccttcgcag 480
 ctaccgcgga cttcagggag cagatittaa gagtaaaaga agatgagaat gttccatttc 540
 tcctggttgg tacaagtcag atctagaaga tagaaggcag gtttctgtag aagaggcaaa 600
 aaacagagct gacccagtgn acgintaact atgtgagacg ttgctanaag cgcgctacgt 660
 tgacaaggta tttttgattt atgagggaa 689

<210> 771

<211> 2177

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (108).. (1928)

<400> 771

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 ttgtcggcag gctcttcga agaccccgca tgcgtccgaa gctggaa atg gaa cca 116
 Met Glu Pro

1

gtg acc ttt gag gat gtg gct gtg aac ttc acc tca gga gag tgg act 164
 Val Thr Phe Glu Asp Val Ala Val Asn Phe Thr Ser Gly Glu Trp Thr
 5 10 15
 ttg ttg gat tcc agt caa aag aag ctc tac aga gat gtg atg aag gaa 212
 Leu Leu Asp Ser Ser Gln Lys Lys Leu Tyr Arg Asp Val Met Lys Glu
 20 25 30 35
 aac ttt ttg aac ctg atc tcc ata gag aaa aca caa gaa gaa aat gtt 260
 Asn Phe Leu Asn Leu Ile Ser Ile Glu Lys Thr Gln Glu Glu Asn Val

40	45	50	
gaa gag gac tac caa aat ctc aga act caa gtg att gag aaa gat ggt			308
Glu Glu Asp Tyr Gln Asn Leu Arg Thr Gln Val Ile Glu Lys Asp Gly			
55	60	65	
gaa tgt gaa cgt ggt tgt caa tgt gaa caa acc cag gca cag agt ccg			356
Glu Cys Glu Arg Gly Cys Gln Cys Glu Gln Thr Gln Ala Gln Ser Pro			
70	75	80	
gag tat att gtt aat gag gac atg cct cct gca gca aca gga tgt gga			404
Glu Tyr Ile Val Asn Glu Asp Met Pro Pro Ala Ala Thr Gly Cys Gly			
85	90	95	
agc agt ttg tat gtg aga aac gtc att ggt aat tca ccc tgg gat gta			452
Ser Ser Leu Tyr Val Arg Asn Val Ile Gly Asn Ser Pro Trp Asp Val			
100	105	110	115
cac ctc agt ggt caa act caa gag aaa cca ttt gag tgt aag gaa cct			500
His Leu Ser Gly Gln Thr Gln Glu Lys Pro Phe Glu Cys Lys Glu Pro			
120	125	130	
gtg gag aag gct ttt aaa cct gag gaa tgc tgg gaa gat atg ggt cat			548
Val Glu Lys Ala Phe Lys Pro Glu Glu Cys Trp Glu Asp Met Gly His			
135	140	145	
tct aag gca ttt cag gtt cat gga agt tct cga gag aaa tcc tat gaa			596
Ser Lys Ala Phe Gln Val His Gly Ser Ser Arg Glu Lys Ser Tyr Glu			
150	155	160	
aat cag caa tgt gat gca gct cat aga aac ctc cat tgt gat ccg cat			644
Asn Gln Gln Cys Asp Ala Ala His Arg Asn Leu His Cys Asp Pro His			
165	170	175	
cat gag aga acg cat gat gga aat aaa aac aat gag aat acc ttt atg			692
His Glu Arg Thr His Asp Gly Asn Lys Asn Asn Glu Asn Thr Phe Met			
180	185	190	195
aag tgt aca tct gac cag atc gat gaa aaa ctc cac agt gaa gta aag			740

Lys Cys Thr Ser Asp Gln Ile Asp Glu Lys Leu His Ser Glu Val Lys	
200	205 210
cca ttt gtg tgt aag cag tgt gga gaa gcc ttt gtt aat tcc agt cac	788
Pro Phe Val Cys Lys Gln Cys Gly Glu Ala Phe Val Asn Ser Ser His	
215	220 225
ctt atc agt cat gag cga att cat att gta gaa aag tgt tat att tgc	836
Leu Ile Ser His Glu Arg Ile His Ile Val Glu Lys Cys Tyr Ile Cys	
230	235 240
aaa cag tgt ggg aaa aca ttt aga tat ttg tca tgc ttc caa aaa cat	884
Lys Gln Cys Gly Lys Thr Phe Arg Tyr Leu Ser Cys Phe Gln Lys His	
245	250 255
gaa aga att cac agt gga gag agg cct tat gtg tgt gag caa tgt ggg	932
Glu Arg Ile His Ser Gly Glu Arg Pro Tyr Val Cys Glu Gln Cys Gly	
260	265 270 275
aaa gga ttt att cag ttg aaa tac ctt ctc atg cac caa agg agt cat	980
Lys Gly Phe Ile Gln Leu Lys Tyr Leu Leu Met His Gln Arg Ser His	
280	285 290
gga gag aat tct tat gaa tgt aaa cat tgt gaa aaa gtc ttc act att	1028
Gly Glu Asn Ser Tyr Glu Cys Lys His Cys Glu Lys Val Phe Thr Ile	
295	300 305
tcc agt gtc cat aat gtt cat gaa gat att caa gat gga gac aag cca	1076
Ser Ser Val His Asn Val His Glu Asp Ile Gln Asp Gly Asp Lys Pro	
310	315 320
tat tca tgc aca cat tgt ggg aaa gct ttc tct agt ccc agt gac tat	1124
Tyr Ser Cys Thr His Cys Gly Lys Ala Phe Ser Ser Pro Ser Asp Tyr	
325	330 335
aat agt tgt gaa aga att cac act gga gag aat ccc ttt gta tgt aag	1172
Asn Ser Cys Glu Arg Ile His Thr Gly Glu Asn Pro Phe Val Cys Lys	
340	345 350 355

aaa tgt ggg aaa gcc ttc aaa cgt ttg ggg cat ttt atg aat cat gaa 1220
 Lys Cys Gly Lys Ala Phe Lys Arg Leu Gly His Phe Met Asn His Glu
 360 365 370
 agg att cac act gga gag aag cct tat gcc tgc aaa cat tgt gga aaa 1268
 Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His Cys Gly Lys
 375 380 385
 gcc ttc acc agt tcc agt gac cgg aac agt cat gaa aga att cac act 1316
 Ala Phe Thr Ser Ser Ser Asp Arg Asn Ser His Glu Arg Ile His Thr
 390 395 400
 gga gag aaa ccc ttt gtc tgt aaa acc tgt ggg aaa gcc ttc agt cgt 1364
 Gly Glu Lys Pro Phe Val Cys Lys Thr Cys Gly Lys Ala Phe Ser Arg
 405 410 415
 tct gat tat ctt atc aat cat aaa agg att cat acc gga gag aag cct 1412
 Ser Asp Tyr Leu Ile Asn His Lys Arg Ile His Thr Gly Glu Lys Pro
 420 425 430 435
 tat ccg tgt aag tat tgt ggg aaa gcc ttt gcc act tcc agt gac aga 1460
 Tyr Pro Cys Lys Tyr Cys Gly Lys Ala Phe Ala Thr Ser Ser Asp Arg
 440 445 450
 aac agt cat gaa aga att cat act ggt gag aga tcc ttt ctg tgt aaa 1508
 Asn Ser His Glu Arg Ile His Thr Gly Glu Arg Ser Phe Leu Cys Lys
 455 460 465
 aaa tgt ggg aaa gtg ttc att ctt tct ggt gat cta atc aag cac gag 1556
 Lys Cys Gly Lys Val Phe Ile Leu Ser Gly Asp Leu Ile Lys His Glu
 470 475 480
 agg att cac act gga gag aag cct tat gcc tgc aaa cat tgt gga aaa 1604
 Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His Cys Gly Lys
 485 490 495
 gct ttc act act tca agt gcc cgc aac agt cat gaa aga att cac act 1652
 Ala Phe Thr Thr Ser Ser Ala Arg Asn Ser His Glu Arg Ile His Thr

500 505 510 515
 gga gag aag ccg tat aca tgt aag cat tgc aca aaa act ttt acc act 1700
 Gly Glu Lys Pro Tyr Thr Cys Lys His Cys Thr Lys Thr Phe Thr Thr
 520 525 530
 tcc agt acc cgt aac agt cat gaa aaa act cac act gca gag aag cat 1748
 Ser Ser Thr Arg Asn Ser His Glu Lys Thr His Thr Ala Glu Lys His
 535 540 545
 ttt gcg tgt aac ctt tgt ggg aaa acc ttc aac agt cag agt tcc tat 1796
 Phe Ala Cys Asn Leu Cys Gly Lys Thr Phe Asn Ser Gln Ser Ser Tyr
 550 555 560
 tac act cat aaa aaa ata cac tct atg aaa gag aaa ctt tat gta tgt 1844
 Tyr Thr His Lys Lys Ile His Ser Met Lys Glu Lys Leu Tyr Val Cys
 565 570 575
 aaa cac tgt ggg aaa gaa ttc act tac tgt ggt aat ttc ctt aag cat 1892
 Lys His Cys Gly Lys Glu Phe Thr Tyr Cys Gly Asn Phe Leu Lys His
 580 585 590 595
 gaa aga agt cac acc atg gaa aca tta tcc ata tga acaataggta 1938
 Glu Arg Ser His Thr Met Glu Thr Leu Ser Ile
 600 605
 aaagcatttc tgggtcctac atcccatag aaacctatat aaaaatctca cagtacagaa 1998
 cttgtataac tataaactgt gtggicaact tgcctttatt gtgaggtatg gaaaaagttt 2058
 ggggtgggcca cgcgagatag cttagctagt catggttctt taggatagcc tgattttgat 2118
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<210> 772

<211> 606

<212> PRT

<213> Mus musculus

<400> 772

Met Glu Pro Val Thr Phe Glu Asp Val Ala Val Asn Phe Thr Ser Gly
 1 5 10 15
 Glu Trp Thr Leu Leu Asp Ser Ser Gln Lys Lys Leu Tyr Arg Asp Val
 20 25 30
 Met Lys Glu Asn Phe Leu Asn Leu Ile Ser Ile Glu Lys Thr Gln Glu
 35 40 45
 Glu Asn Val Glu Glu Asp Tyr Gln Asn Leu Arg Thr Gln Val Ile Glu
 50 55 60
 Lys Asp Gly Glu Cys Glu Arg Gly Cys Gln Cys Glu Gln Thr Gln Ala
 65 70 75 80
 Gln Ser Pro Glu Tyr Ile Val Asn Glu Asp Met Pro Pro Ala Ala Thr
 85 90 95
 Gly Cys Gly Ser Ser Leu Tyr Val Arg Asn Val Ile Gly Asn Ser Pro
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 Trp Asp Val His Leu Ser Gly Gln Thr Gln Glu Lys Pro Phe Glu Cys
 115 120 125
 Lys Glu Pro Val Glu Lys Ala Phe Lys Pro Glu Glu Cys Trp Glu Asp
 130 135 140
 Met Gly His Ser Lys Ala Phe Gln Val His Gly Ser Ser Arg Glu Lys
 145 150 155 160
 Ser Tyr Glu Asn Gln Gln Cys Asp Ala Ala His Arg Asn Leu His Cys
 165 170 175
 Asp Pro His His Glu Arg Thr His Asp Gly Asn Lys Asn Asn Glu Asn
 180 185 190
 Thr Phe Met Lys Cys Thr Ser Asp Gln Ile Asp Glu Lys Leu His Ser
 195 200 205
 Glu Val Lys Pro Phe Val Cys Lys Gln Cys Gly Glu Ala Phe Val Asn
 210 215 220

1860/2644

450 455 460
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 465 470 475 480
 Lys His Glu Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys His
 485 490 495
 Cys Gly Lys Ala Phe Thr Thr Ser Ser Ala Arg Asn Ser His Glu Arg
 500 505 510
 Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys His Cys Thr Lys Thr
 515 520 525
 Phe Thr Thr Ser Ser Thr Arg Asn Ser His Glu Lys Thr His Thr Ala
 530 535 540
 Glu Lys His Phe Ala Cys Asn Leu Cys Gly Lys Thr Phe Asn Ser Gln
 545 550 555 560
 Ser Ser Tyr Tyr Thr His Lys Lys Ile His Ser Met Lys Glu Lys Leu
 565 570 575
 Tyr Val Cys Lys His Cys Gly Lys Glu Phe Thr Tyr Cys Gly Asn Phe
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<210> 773

<211> 2292

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1).. (2292)

<400> 773

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cca ttg tca tac acc cgg ttt agc ctt gct cgg caa gta gat gga gat	96
Pro Leu Ser Tyr Thr Arg Phe Ser Leu Ala Arg Gln Val Asp Gly Asp	
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aac agt cat gtg gag atg aaa ctg gct gca gat gaa gaa gaa aat gcc	144
Asn Ser His Val Glu Met Lys Leu Ala Ala Asp Glu Glu Glu Asn Ala	
35 40 45	
gac aat aac atg aag gct agt gtc aga aaa ccc aag agg ttt aat gga	192
Asp Asn Asn Met Lys Ala Ser Val Arg Lys Pro Lys Arg Phe Asn Gly	
50 55 60	
aga ctc tgc ttt gca gct att gca cta gtc att ttc ttc ttg att gga	240
Arg Leu Cys Phe Ala Ala Ile Ala Leu Val Ile Phe Phe Leu Ile Gly	
65 70 75 80	
ttc atg agt ggc tac ctg ggc tat tgt aag cgt gta gaa caa aaa gag	288
Phe Met Ser Gly Tyr Leu Gly Tyr Cys Lys Arg Val Glu Gln Lys Glu	
85 90 95	
gag tgt gtg aaa ctg gct gaa acg gag gag aca gac aag tca gaa acc	336
Glu Cys Val Lys Leu Ala Glu Thr Glu Glu Thr Asp Lys Ser Glu Thr	
100 105 110	
atg gaa aca gag gat gtt cct aca tca tct cgc tta tat tgg gca gac	384
Met Glu Thr Glu Asp Val Pro Thr Ser Ser Arg Leu Tyr Trp Ala Asp	
115 120 125	
ctc aaa aca ctg ttg tca gag aag ttg aac tcc ata gag ttt gct gac	432
Leu Lys Thr Leu Leu Ser Glu Lys Leu Asn Ser Ile Glu Phe Ala Asp	
130 135 140	
acc atc aag cag ctg agc cag aat aca tac act cct cgt gag gct gga	480

Thr Ile Lys Gln Leu Ser Gln Asn Thr Tyr Thr Pro Arg Glu Ala Gly
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 tct caa aaa gat gaa agt ctt gcc tat tat att gaa aat cag ttc cat 528
 Ser Gln Lys Asp Glu Ser Leu Ala Tyr Tyr Ile Glu Asn Gln Phe His
 165 170 175
 gaa ttt aaa ttc agc aaa gtc tgg cga gat gaa cac tat gtg aag att 576
 Glu Phe Lys Phe Ser Lys Val Trp Arg Asp Glu His Tyr Val Lys Ile
 180 185 190
 caa gtg aaa agc agc att ggt caa aac atg gtg acc ata gtg cag tca 624
 Gln Val Lys Ser Ser Ile Gly Gln Asn Met Val Thr Ile Val Gln Ser
 195 200 205
 aat ggt aac tta gac cca gtg gag tct ccc gag ggt tat gtg gca ttc 672
 Asn Gly Asn Leu Asp Pro Val Glu Ser Pro Glu Gly Tyr Val Ala Phe
 210 215 220
 agt aaa cct aca gaa gtt tct ggt aaa ctg gtc cat gct aat ttt ggc 720
 Ser Lys Pro Thr Glu Val Ser Gly Lys Leu Val His Ala Asn Phe Gly
 225 230 235 240
 act aaa aag gac ttt gaa gaa cta agt tat tct gtg aat gga tct tta 768
 Thr Lys Lys Asp Phe Glu Glu Leu Ser Tyr Ser Val Asn Gly Ser Leu
 245 250 255
 gtg att gtt aga gca ggg gaa att act ttt gca gaa aag gtt gca aat 816
 Val Ile Val Arg Ala Gly Glu Ile Thr Phe Ala Glu Lys Val Ala Asn
 260 265 270
 gcc caa agc ttt aat gca att ggt gtc ctc ata tac atg gac aag aat 864
 Ala Gln Ser Phe Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Lys Asn
 275 280 285
 aaa ttc ccc gtt gtt gag gca gac ctt gca ctc ttt gga cat gct cat 912
 Lys Phe Pro Val Val Glu Ala Asp Leu Ala Leu Phe Gly His Ala His
 290 295 300

cta gga act ggt gat cca tac aca cct ggc ttt cct tct ttc aat cat 960
 Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His
 305 310 315 320
 act cag ttt ccg cca tct cag tca tca ggg ttg cct aat ata cct gtg 1008
 Thr Gln Phe Pro Pro Ser Gln Ser Ser Gly Leu Pro Asn Ile Pro Val
 325 330 335
 caa aca atc tca aga gct gct gca gaa aag cta ttt gga aaa atg gaa 1056
 Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Lys Met Glu
 340 345 350
 gga agc tgt cct gct aga tgg aac ata gat tct tca tgt aag ctg gaa 1104
 Gly Ser Cys Pro Ala Arg Trp Asn Ile Asp Ser Ser Cys Lys Leu Glu
 355 360 365
 ctt tca cag aat caa aat gtg aag ctc att gtg aaa aac gta ctg aaa 1152
 Leu Ser Gln Asn Gln Asn Val Lys Leu Ile Val Lys Asn Val Leu Lys
 370 375 380
 gaa aga aga ata ctt aac atc ttt gga gtt att aaa ggt tat gag gaa 1200
 Glu Arg Arg Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Tyr Glu Glu
 385 390 395 400
 cca gac cgt tat gtt gta gta gga gcc cag aga gac gct ttg ggt gct 1248
 Pro Asp Arg Tyr Val Val Val Gly Ala Gln Arg Asp Ala Leu Gly Ala
 405 410 415
 ggt gtt gcg gcg aag tcc agt gtg gga aca ggt ctt ctg ttg aaa ctt 1296
 Gly Val Ala Ala Lys Ser Ser Val Gly Thr Gly Leu Leu Leu Lys Leu
 420 425 430
 gcc caa gta ttc tca gat atg att tca aaa gat gga ttt aga ccc agc 1344
 Ala Gln Val Phe Ser Asp Met Ile Ser Lys Asp Gly Phe Arg Pro Ser
 435 440 445
 aga agt ata atc ttt gcc agc tgg act gca ggc gac ttt gga gct gtt 1392
 Arg Ser Ile Ile Phe Ala Ser Trp Thr Ala Gly Asp Phe Gly Ala Val

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      450              455              460
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Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys
465              470              475              480
gct ttc act tat att aat ttg gat aaa gtt gtc ctt ggt act agt aac 1488
Ala Phe Thr Tyr Ile Asn Leu Asp Lys Val Val Leu Gly Thr Ser Asn
      485              490              495
ttc aaa gtt tct gcc agc ccc tta tta tat aca ctt atg gga aag ata 1536
Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu Met Gly Lys Ile
      500              505              510
atg caa gat gta aag cat cca gtt gat gga aaa tct cta tat aga gac 1584
Met Gln Asp Val Lys His Pro Val Asp Gly Lys Ser Leu Tyr Arg Asp
      515              520              525
agc aat tgg att agc aaa gtt gag aaa ctt tcc ttt gac aat gct gca 1632
Ser Asn Trp Ile Ser Lys Val Glu Lys Leu Ser Phe Asp Asn Ala Ala
      530              535              540
tat cct ttc ctt gca tat tct gga atc cca gca gtt tct ttt tgt ttt 1680
Tyr Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe
545              550              555              560
tgt gag gat gca gac tat cct tat ttg ggc act aga ttg gat acc tat 1728
Cys Glu Asp Ala Asp Tyr Pro Tyr Leu Gly Thr Arg Leu Asp Thr Tyr
      565              570              575
gag gca ttg act cag aaa gtt cct cag ctc aac caa atg gtt cgt aca 1776
Glu Ala Leu Thr Gln Lys Val Pro Gln Leu Asn Gln Met Val Arg Thr
      580              585              590
gca gcg gaa gtg gct ggt cag ctc att att aaa ctt acc cat gac gtt 1824
Ala Ala Glu Val Ala Gly Gln Leu Ile Ile Lys Leu Thr His Asp Val
      595              600              605
gaa ttg aac ctg gac tat gag atg tat aac agc aaa cta ctg tca ttt 1872

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Glu Leu Asn Leu Asp Tyr Glu Met Tyr Asn Ser Lys Leu Leu Ser Phe
 610 615 620
 atg aag gat ctg aac cag ttc aaa aca gat atc agg gat atg ggt cta 1920
 Met Lys Asp Leu Asn Gln Phe Lys Thr Asp Ile Arg Asp Met Gly Leu
 625 630 635 640
 agt cta cag tgg ctg tat tcc gct cgt gga gac tac ttc cgt gct act 1968
 Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Tyr Phe Arg Ala Thr
 645 650 655
 tct aga cta aca act gat ttt cat aat gct gag aaa aca aac aga ttt 2016
 Ser Arg Leu Thr Thr Asp Phe His Asn Ala Glu Lys Thr Asn Arg Phe
 660 665 670
 gtc atg agg gaa atc aat gat cgt att atg aaa gtg gag tat cac ttc 2064
 Val Met Arg Glu Ile Asn Asp Arg Ile Met Lys Val Glu Tyr His Phe
 675 680 685
 ctg tcg ccc tat gta tct cca aga gag tct cct ttc cga cat atc ttc 2112
 Leu Ser Pro Tyr Val Ser Pro Arg Glu Ser Pro Phe Arg His Ile Phe
 690 695 700
 tgg ggc tct ggc tct cac act ctc tca gct tta gtg gag aac ttg aag 2160
 Trp Gly Ser Gly Ser His Thr Leu Ser Ala Leu Val Glu Asn Leu Lys
 705 710 715 720
 ctt cgt caa aaa aat att act gct ttt aat gaa acc ctc ttc aga aac 2208
 Leu Arg Gln Lys Asn Ile Thr Ala Phe Asn Glu Thr Leu Phe Arg Asn
 725 730 735
 cag ttg gcc ctg gct act tgg act att cag gga gtc gca aat gcc ctc 2256
 Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Val Ala Asn Ala Leu
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 755 760

<210> 774

<211> 763

<212> PRT

<213> Mus musculus

<400> 774

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Asn Ser His Val Glu Met Lys Leu Ala Ala Asp Glu Glu Glu Asn Ala
      35             40             45
Asp Asn Asn Met Lys Ala Ser Val Arg Lys Pro Lys Arg Phe Asn Gly
      50             55             60
Arg Leu Cys Phe Ala Ala Ile Ala Leu Val Ile Phe Phe Leu Ile Gly
      65             70             75             80
Phe Met Ser Gly Tyr Leu Gly Tyr Cys Lys Arg Val Glu Gln Lys Glu
      85             90             95
Glu Cys Val Lys Leu Ala Glu Thr Glu Glu Thr Asp Lys Ser Glu Thr
      100            105            110
Met Glu Thr Glu Asp Val Pro Thr Ser Ser Arg Leu Tyr Trp Ala Asp
      115            120            125
Leu Lys Thr Leu Leu Ser Glu Lys Leu Asn Ser Ile Glu Phe Ala Asp
      130            135            140
Thr Ile Lys Gln Leu Ser Gln Asn Thr Tyr Thr Pro Arg Glu Ala Gly
      145            150            155            160
Ser Gln Lys Asp Glu Ser Leu Ala Tyr Tyr Ile Glu Asn Gln Phe His
      165            170            175

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Glu Phe Lys Phe Ser Lys Val Trp Arg Asp Glu His Tyr Val Lys Ile
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 Gln Val Lys Ser Ser Ile Gly Gln Asn Met Val Thr Ile Val Gln Ser
 195 200 205
 Asn Gly Asn Leu Asp Pro Val Glu Ser Pro Glu Gly Tyr Val Ala Phe
 210 215 220
 Ser Lys Pro Thr Glu Val Ser Gly Lys Leu Val His Ala Asn Phe Gly
 225 230 235 240
 Thr Lys Lys Asp Phe Glu Glu Leu Ser Tyr Ser Val Asn Gly Ser Leu
 245 250 255
 Val Ile Val Arg Ala Gly Glu Ile Thr Phe Ala Glu Lys Val Ala Asn
 260 265 270
 Ala Gln Ser Phe Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Lys Asn
 275 280 285
 Lys Phe Pro Val Val Glu Ala Asp Leu Ala Leu Phe Gly His Ala His
 290 295 300
 Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His
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 Thr Gln Phe Pro Pro Ser Gln Ser Ser Gly Leu Pro Asn Ile Pro Val
 325 330 335
 Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Lys Met Glu
 340 345 350
 Gly Ser Cys Pro Ala Arg Trp Asn Ile Asp Ser Ser Cys Lys Leu Glu
 355 360 365
 Leu Ser Gln Asn Gln Asn Val Lys Leu Ile Val Lys Asn Val Leu Lys
 370 375 380
 Glu Arg Arg Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Tyr Glu Glu
 385 390 395 400
 Pro Asp Arg Tyr Val Val Val Gly Ala Gln Arg Asp Ala Leu Gly Ala

405	410	415
Gly Val Ala Ala Lys Ser Ser Val Gly Thr Gly Leu Leu Leu Lys Leu		
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Ala Gln Val Phe Ser Asp Met Ile Ser Lys Asp Gly Phe Arg Pro Ser		
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Arg Ser Ile Ile Phe Ala Ser Trp Thr Ala Gly Asp Phe Gly Ala Val		
450	455	460
Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys		
465	470	475
Ala Phe Thr Tyr Ile Asn Leu Asp Lys Val Val Leu Gly Thr Ser Asn		
485	490	495
Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu Met Gly Lys Ile		
500	505	510
Met Gln Asp Val Lys His Pro Val Asp Gly Lys Ser Leu Tyr Arg Asp		
515	520	525
Ser Asn Trp Ile Ser Lys Val Glu Lys Leu Ser Phe Asp Asn Ala Ala		
530	535	540
Tyr Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe		
545	550	555
Cys Glu Asp Ala Asp Tyr Pro Tyr Leu Gly Thr Arg Leu Asp Thr Tyr		
565	570	575
Glu Ala Leu Thr Gln Lys Val Pro Gln Leu Asn Gln Met Val Arg Thr		
580	585	590
Ala Ala Glu Val Ala Gly Gln Leu Ile Ile Lys Leu Thr His Asp Val		
595	600	605
Glu Leu Asn Leu Asp Tyr Glu Met Tyr Asn Ser Lys Leu Leu Ser Phe		
610	615	620
Met Lys Asp Leu Asn Gln Phe Lys Thr Asp Ile Arg Asp Met Gly Leu		
625	630	635
		640

Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Tyr Phe Arg Ala Thr
 645 650 655
 Ser Arg Leu Thr Thr Asp Phe His Asn Ala Glu Lys Thr Asn Arg Phe
 660 665 670
 Val Met Arg Glu Ile Asn Asp Arg Ile Met Lys Val Glu Tyr His Phe
 675 680 685
 Leu Ser Pro Tyr Val Ser Pro Arg Glu Ser Pro Phe Arg His Ile Phe
 690 695 700
 Trp Gly Ser Gly Ser His Thr Leu Ser Ala Leu Val Glu Asn Leu Lys
 705 710 715 720
 Leu Arg Gln Lys Asn Ile Thr Ala Phe Asn Glu Thr Leu Phe Arg Asn
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<210> 775

<211> 991

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (67).. (753)

<400> 775

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Met Ser Val Ser Glu Ile Phe Val Glu Leu Gln Gly Phe Leu
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gct gcc gag cag gac atc cga gag gaa ata cga aaa gtt gta cag agt 156
Ala Ala Glu Gln Asp Ile Arg Glu Glu Ile Arg Lys Val Val Gln Ser
15 20 25 30
tta gaa caa act gct cga gag att ttg acc cta ctt caa ggg gtc cac 204
Leu Glu Gln Thr Ala Arg Glu Ile Leu Thr Leu Leu Gln Gly Val His
35 40 45
cag ggt act gga ttt cag gac att cca aag agg tgc ttg aaa gcg aga 252
Gln Gly Thr Gly Phe Gln Asp Ile Pro Lys Arg Cys Leu Lys Ala Arg
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gaa cat ttc agt aca gta aaa aca cat ctc acg tcc ctg aag acc aag 300
Glu His Phe Ser Thr Val Lys Thr His Leu Thr Ser Leu Lys Thr Lys
65 70 75
ttc ccc gct gag cag tat tac agg ttt cat gag cat tgg cgg ttc gtg 348
Phe Pro Ala Glu Gln Tyr Tyr Arg Phe His Glu His Trp Arg Phe Val
80 85 90
ctt cag cgc ctg gtc ttc ctg gca gca ttt gtg gta tat ttg gaa aca 396
Leu Gln Arg Leu Val Phe Leu Ala Ala Phe Val Val Tyr Leu Glu Thr
95 100 105 110
gag acc ctg gtg acc cga gag gct gtt aca gag att ctt ggc att gaa 444
Glu Thr Leu Val Thr Arg Glu Ala Val Thr Glu Ile Leu Gly Ile Glu
115 120 125
cca gat cgg gaa aaa ggg ttt cat ctg gat gtg gaa gat tat ctc tca 492
Pro Asp Arg Glu Lys Gly Phe His Leu Asp Val Glu Asp Tyr Leu Ser
130 135 140
gga gtt tta att ctt gcc agt gaa ctg tcg agg ctg tct gtc aac agt 540
Gly Val Leu Ile Leu Ala Ser Glu Leu Ser Arg Leu Ser Val Asn Ser
145 150 155

gtc act gct gga gac tac tct cgg ccc ctt cac att tct act ttc atc 588
 Val Thr Ala Gly Asp Tyr Ser Arg Pro Leu His Ile Ser Thr Phe Ile
 160 165 170
 aat gag ctg gat tct ggt ttt cgt ctt ctc aat ctg aaa aat gac tcc 636
 Asn Glu Leu Asp Ser Gly Phe Arg Leu Leu Asn Leu Lys Asn Asp Ser
 175 180 185 190
 ctg agg aag cgc tac gac ggc ttg aag tac gat gtg aag aaa gta gag 684
 Leu Arg Lys Arg Tyr Asp Gly Leu Lys Tyr Asp Val Lys Lys Val Glu
 195 200 205
 gag gtg gtc tat gac ctt tcc atc cga ggc ttc aat aag gag aca gca 732
 Glu Val Val Tyr Asp Leu Ser Ile Arg Gly Phe Asn Lys Glu Thr Ala
 210 215 220
 gcg gct tgt ggt gaa aaa tag gagcttttcc ctggggctgg ccttgctggc 783
 Ala Ala Cys Gly Glu Lys
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 gctgcagttg ccagggaggg ctagctcagt gcctcttcct gtagttagca caccagttgc 843
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<211> 583

<212> PRT

<213> Mus musculus

<400> 776

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 35 40 45
 Thr Gly Phe Gln Asp Ile Pro Lys Arg Cys Leu Lys Ala Arg Glu His
 50 55 60
 Phe Ser Thr Val Lys Thr His Leu Thr Ser Leu Lys Thr Lys Phe Pro
 65 70 75 80
 Ala Glu Gln Tyr Tyr Arg Phe His Glu His Trp Arg Phe Val Leu Gln
 85 90 95
 Arg Leu Val Phe Leu Ala Ala Phe Val Val Tyr Leu Glu Thr Glu Thr
 100 105 110
 Leu Val Thr Arg Glu Ala Val Thr Glu Ile Leu Gly Ile Glu Pro Asp
 115 120 125
 Arg Glu Lys Gly Phe His Leu Asp Val Glu Asp Tyr Leu Ser Gly Val
 130 135 140
 Leu Ile Leu Ala Ser Glu Leu Ser Arg Leu Ser Val Asn Ser Val Thr
 145 150 155 160
 Ala Gly Asp Tyr Ser Arg Pro Leu His Ile Ser Thr Phe Ile Asn Glu
 165 170 175
 Leu Asp Ser Gly Phe Arg Leu Leu Asn Leu Lys Asn Asp Ser Leu Arg
 180 185 190
 Lys Arg Tyr Asp Gly Leu Lys Tyr Asp Val Lys Lys Val Glu Glu Val
 195 200 205
 Val Tyr Asp Leu Ser Ile Arg Gly Phe Asn Lys Glu Thr Ala Ala Ala
 210 215 220
 Cys Gly Glu Lys
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<210> 777

<211> 213

<212> DNA

<213> Mus musculus

<400> 777

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<210> 778

<211> 1068

<212> DNA

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<220>

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<222> (143).. (751)

<400> 778

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 atttataatga gaaaaggatt cg atg atc ttt gac tgt act gag tgt tat gat 172

Met Ile Phe Asp Cys Thr Glu Cys Tyr Asp

1

5

10

cca gtt act aaa caa tgg aca act gtt gct tca atg aat cac ccc cgc 220

Pro Val Thr Lys Gln Trp Thr Thr Val Ala Ser Met Asn His Pro Arg

15

20

25

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Cys Gly Leu Gly Val Cys Val Cys Tyr Gly Ala Ile Tyr Ala Leu Gly
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 Gly Trp Val Gly Ala Glu Ile Gly Asn Thr Ile Glu Arg Phe Asp Pro
 45 50 55
 gat gag aat aag tgg gaa gtg gtg ggc agc atg gca gtg tca cgc tac 364
 Asp Glu Asn Lys Trp Glu Val Val Gly Ser Met Ala Val Ser Arg Tyr
 60 65 70
 tac ttt ggg tgc tgt gag atg caa ggt tta att tat gca gtt gga gga 412
 Tyr Phe Gly Cys Cys Glu Met Gln Gly Leu Ile Tyr Ala Val Gly Gly
 75 80 85 90
 atc agc aat gag ggg cta gag ctc cgt tcc ttt gag gtt tat gat cca 460
 Ile Ser Asn Glu Gly Leu Glu Leu Arg Ser Phe Glu Val Tyr Asp Pro
 95 100 105
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 Leu Ser Lys Arg Trp Ser Pro Leu Pro Pro Met Gly Thr Arg Arg Ala
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 Tyr Leu Gly Val Ala Ala Leu Asn Asp Cys Ile Tyr Ala Ile Gly Gly
 125 130 135
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 Trp Asn Glu Thr Gln Asp Ala Leu His Thr Val Glu Lys Tyr Ser Phe
 140 145 150
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 155 160 165 170
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 Gly Met Cys Ala Val Thr Val Asn Gly Leu Leu Tyr Val Ser Gly Gly
 175 180 185

cgg tct tct agc cat gat ttc ttg gcc cca ggt act ttc gga ctc agt 748
 Arg Ser Ser Ser His Asp Phe Leu Ala Pro Gly Thr Phe Gly Leu Ser
 190 195 200

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 atttgcaaaa cttaaaaaaa aaaaaaa 1068

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<211> 202

<212> PRT

<213> Mus musculus

<400> 779

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 35 40 45
 Ile Gly Asn Thr Ile Glu Arg Phe Asp Pro Asp Glu Asn Lys Trp Glu
 50 55 60
 Val Val Gly Ser Met Ala Val Ser Arg Tyr Tyr Phe Gly Cys Cys Glu
 65 70 75 80
 Met Gln Gly Leu Ile Tyr Ala Val Gly Gly Ile Ser Asn Glu Gly Leu
 85 90 95

Glu Leu Arg Ser Phe Glu Val Tyr Asp Pro Leu Ser Lys Arg Trp Ser
 100 105 110
 Pro Leu Pro Pro Met Gly Thr Arg Arg Ala Tyr Leu Gly Val Ala Ala
 115 120 125
 Leu Asn Asp Cys Ile Tyr Ala Ile Gly Gly Trp Asn Glu Thr Gln Asp
 130 135 140
 Ala Leu His Thr Val Glu Lys Tyr Ser Phe Glu Glu Glu Lys Trp Val
 145 150 155 160
 Glu Val Ala Ser Met Lys Val Pro Arg Ala Gly Met Cys Ala Val Thr
 165 170 175
 Val Asn Gly Leu Leu Tyr Val Ser Gly Gly Arg Ser Ser Ser His Asp
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 Phe Leu Ala Pro Gly Thr Phe Gly Leu Ser
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<210> 780

<211> 1070

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (34).. (324)

<400> 780

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Ala Asp Gly Ala Ala Lys Ala Glu Pro Lys Arg Arg Ser Ala Arg Leu
10 15 20
tcg gcc aag ccc gcc cct gcc aag gtg gac gcg aag ccg aaa aag gcc 150
Ser Ala Lys Pro Ala Pro Ala Lys Val Asp Ala Lys Pro Lys Lys Ala
25 30 35
gcg gga aag gat aaa gca tca gac aaa aaa gtg cag ata aaa ggg aag 198
Ala Gly Lys Asp Lys Ala Ser Asp Lys Lys Val Gln Ile Lys Gly Lys
40 45 50 55
agg gga gcg aag ggc aaa cag gct gac gtg gct gac cag caa acc aca 246
Arg Gly Ala Lys Gly Lys Gln Ala Asp Val Ala Asp Gln Gln Thr Thr
60 65 70
gag ctg cct gca gaa aat gga gag acg gaa aac cag agt cca gcc tct 294
Glu Leu Pro Ala Glu Asn Gly Glu Thr Glu Asn Gln Ser Pro Ala Ser
75 80 85
gaa gaa gag aaa gaa gct aag tcc gac taa gcattccatca cgtctgtcag 344
Glu Glu Glu Lys Glu Ala Lys Ser Asp
90 95
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atgtct

1070

<210> 781

<211> 96

<212> PRT

<213> Mus musculus

<400> 781

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20 25 30

Asp Ala Lys Pro Lys Lys Ala Ala Gly Lys Asp Lys Ala Ser Asp Lys

35 40 45

Lys Val Gln Ile Lys Gly Lys Arg Gly Ala Lys Gly Lys Gln Ala Asp

50 55 60

Val Ala Asp Gln Gln Thr Thr Glu Leu Pro Ala Glu Asn Gly Glu Thr

65 70 75 80

Glu Asn Gln Ser Pro Ala Ser Glu Glu Glu Lys Glu Ala Lys Ser Asp

85 90 95

<210> 782

<211> 272

<212> DNA

<213> Mus musculus

<400> 782

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<210> 783

<211> 311

<212> DNA

<213> Mus musculus

<400> 783

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<210> 784

<211> 3769

<212> DNA

<213> Mus musculus

<400> 784

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<210> 785

<211> 637

<212> DNA

<213> Mus musculus

<400> 785

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 cgagaggaag agatgatgat tcgccaacgt gagatggaag aacaaatgag acgccaacga 540
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 gtggacaatg acatgggaga tcgtatggtt cagaggc 637

<210> 786

<211> 498

<212> DNA

<213> Mus musculus

<400> 786

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ctattcagtt ttccagaag atctttgtgc ctgactacga cccaccatt gaagactcct 240
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<210> 787

<211> 1478

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (316).. (1122)

<400> 787

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caaacaggaa ggagggaagg caaggagtgc gggcagaggg cgggtcgttc ccagcagcac 180
cccagtcctt ccccgctccg tctccgaccc actggggccg gggcgggctt gcgcgtcagc 240
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ccggccgacg ccgcc atg agc gcc gcg ctt ttc agc ctg gac agc ccg gtg 351
 Met Ser Ala Ala Leu Phe Ser Leu Asp Ser Pro Val
 1 5 10
 cgc ggc aca ccc tgg ccc aca gaa ccc gcg gcc ttc tac gag cca ggc 399
 Arg Gly Thr Pro Trp Pro Thr Glu Pro Ala Ala Phe Tyr Glu Pro Gly
 15 20 25
 agg gtg gac aag ccc ggc cga ggg ccc gag cca ggg gaa ctg ggg gag 447
 Arg Val Asp Lys Pro Gly Arg Gly Pro Glu Pro Gly Glu Leu Gly Glu
 30 35 40
 ctg ggc tcc acg act cct gcc atg tac gac gac gag agc gcc atc gac 495
 Leu Gly Ser Thr Thr Pro Ala Met Tyr Asp Asp Glu Ser Ala Ile Asp
 45 50 55 60
 ttc agc gcc tac att gac tcc atg gcc gcc gtg ccc acc cta gag ctg 543
 Phe Ser Ala Tyr Ile Asp Ser Met Ala Ala Val Pro Thr Leu Glu Leu
 65 70 75
 tgc cac gac gaa ctc ttc gcc gac ctc ttc aac agc aac cac aaa gcg 591
 Cys His Asp Glu Leu Phe Ala Asp Leu Phe Asn Ser Asn His Lys Ala
 80 85 90
 gcc ggc gcg ggc ggc ctg gag ctg ctg cag ggc ggc cct acg cga ccc 639
 Ala Gly Ala Gly Gly Leu Glu Leu Leu Gln Gly Gly Pro Thr Arg Pro
 95 100 105
 ccg ggt gtg ggg tct gtc gct agg ggg ccg ctc aag cgc gaa ccc gac 687
 Pro Gly Val Gly Ser Val Ala Arg Gly Pro Leu Lys Arg Glu Pro Asp
 110 115 120
 tgg ggc gac ggc gac gcg ccg ggc tcc ctg ctg ccg gcg caa gtg gcg 735
 Trp Gly Asp Gly Asp Ala Pro Gly Ser Leu Leu Pro Ala Gln Val Ala
 125 130 135 140
 gtg tgc gcg cag aca gtg gtg agc ttg gcg gcc gcg gct cag ccc act 783
 Val Cys Ala Gln Thr Val Val Ser Leu Ala Ala Ala Ala Gln Pro Thr

145	150	155	
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Pro Pro Thr Ser Pro Glu Pro Pro Arg Gly Ser Pro Gly Pro Ser Leu			
160	165	170	
gcg ccc ggc aca gtc cga gaa aag ggc gcg ggc aag agg ggt ccg gac	879		
Ala Pro Gly Thr Val Arg Glu Lys Gly Ala Gly Lys Arg Gly Pro Asp			
175	180	185	
cgc ggc agc ccg gag tac cgg cag cgg cgc gag cgc aac aac atc gct	927		
Arg Gly Ser Pro Glu Tyr Arg Gln Arg Arg Glu Arg Asn Asn Ile Ala			
190	195	200	
gtg cgc aag agc cgc gac aag gcc aag cgc cgc aac cag gag atg cag	975		
Val Arg Lys Ser Arg Asp Lys Ala Lys Arg Arg Asn Gln Glu Met Gln			
205	210	215	220
cag aag ctg gtg gag ttg tcg gcc gag aac gag aag ctg cat cag cgc	1023		
Gln Lys Leu Val Glu Leu Ser Ala Glu Asn Glu Lys Leu His Gln Arg			
225	230	235	
gtg gag cag ctc acc cgg gac ctg gct ggc ctc cgg cag ttc ttc aaa	1071		
Val Glu Gln Leu Thr Arg Asp Leu Ala Gly Leu Arg Gln Phe Phe Lys			
240	245	250	
aaa ctg ccc agc ccg cct ttc ctg ccg ccc acc ggc gcc gac tgc cgg	1119		
Lys Leu Pro Ser Pro Pro Phe Leu Pro Pro Thr Gly Ala Asp Cys Arg			
255	260	265	
taa cgcgcggcgt gggcctttga gactctgaac gacctatacc tcagaccccg	1172		
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1478

<210> 788

<211> 268

<212> PRT

<213> Mus musculus

<400> 788

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Trp Pro Thr Glu Pro Ala Ala Phe Tyr Glu Pro Gly Arg Val Asp Lys

20 25 30

Pro Gly Arg Gly Pro Glu Pro Gly Glu Leu Gly Glu Leu Gly Ser Thr

35 40 45

Thr Pro Ala Met Tyr Asp Asp Glu Ser Ala Ile Asp Phe Ser Ala Tyr

50 55 60

Ile Asp Ser Met Ala Ala Val Pro Thr Leu Glu Leu Cys His Asp Glu

65 70 75 80

Leu Phe Ala Asp Leu Phe Asn Ser Asn His Lys Ala Ala Gly Ala Gly

85 90 95

Gly Leu Glu Leu Leu Gln Gly Gly Pro Thr Arg Pro Pro Gly Val Gly

100 105 110

Ser Val Ala Arg Gly Pro Leu Lys Arg Glu Pro Asp Trp Gly Asp Gly

115 120 125

Asp Ala Pro Gly Ser Leu Leu Pro Ala Gln Val Ala Val Cys Ala Gln

130 135 140

Thr Val Val Ser Leu Ala Ala Ala Ala Gln Pro Thr Pro Pro Thr Ser

145 150 155 160

Pro Glu Pro Pro Arg Gly Ser Pro Gly Pro Ser Leu Ala Pro Gly Thr

165	170	175
Val Arg Glu Lys Gly Ala Gly Lys Arg Gly Pro Asp Arg Gly Ser Pro		
180	185	190
Glu Tyr Arg Gln Arg Arg Glu Arg Asn Asn Ile Ala Val Arg Lys Ser		
195	200	205
Arg Asp Lys Ala Lys Arg Arg Asn Gln Glu Met Gln Gln Lys Leu Val		
210	215	220
Glu Leu Ser Ala Glu Asn Glu Lys Leu His Gln Arg Val Glu Gln Leu		
225	230	235
Thr Arg Asp Leu Ala Gly Leu Arg Gln Phe Phe Lys Lys Leu Pro Ser		
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260	265	

<210> 789

<211> 3244

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (590).. (2515)

<400> 789

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 tgatataaga tgagaacitt ataaagtatt ccgtccaaga gcctaaacg atg act acc 598

Met Thr Thr

1

cca gcg ctg ctg ccc ctc tct ggt cgt agg ata cca cct ttg aac ctg 646
 Pro Ala Leu Leu Pro Leu Ser Gly Arg Arg Ile Pro Pro Leu Asn Leu

5

10

15

ggg ccg ccc tcc ttc cca cat cac agg gct acc ttg aga ctc tcc gag 694
 Gly Pro Pro Ser Phe Pro His His Arg Ala Thr Leu Arg Leu Ser Glu

20

25

30

35

aag ttt atc ctt ctc ctc atc ctt agt gcc ttc atc acc ctg tgt ttt 742
 Lys Phe Ile Leu Leu Leu Ile Leu Ser Ala Phe Ile Thr Leu Cys Phe

40

45

50

ggg gca ttc ttc ttc ctt cca gac tct tca aaa cac aaa cgc ttt gat 790
 Gly Ala Phe Phe Phe Leu Pro Asp Ser Ser Lys His Lys Arg Phe Asp

55

60

65

ctg ggc tta gaa gat gtg tta att cct cac gta gat gcc ggc aaa gga 838
 Leu Gly Leu Glu Asp Val Leu Ile Pro His Val Asp Ala Gly Lys Gly

70

75

80

gct aaa aac ccc ggc gtc ttc ctg atc cat gga ccc gac gaa cac aga 886
 Ala Lys Asn Pro Gly Val Phe Leu Ile His Gly Pro Asp Glu His Arg

85

90

95

cac agg gaa gaa gaa gag cgt ctg aga aat aag att aga gct gac cat 934
 His Arg Glu Glu Glu Glu Arg Leu Arg Asn Lys Ile Arg Ala Asp His

100

105

110

115

gag aaa gcc ctg gaa gaa gca aaa gaa aaa tta aga aag tca aga gag 982

Glu Lys Ala Leu Glu Glu Ala Lys Glu Lys Leu Arg Lys Ser Arg Glu
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 gaa atc cgt gca gaa att cag aca gag aaa aac aaa gta gcc caa gca 1030
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 135 140 145
 atg aag aca aaa gag acc agg gta ctg ccg cct gtc cct gtc cca caa 1078
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 150 155 160
 cgt gta ggg gtc agt ggt ggg gat cca gaa gac atg gag atc aag aag 1126
 Arg Val Gly Val Ser Gly Gly Asp Pro Glu Asp Met Glu Ile Lys Lys
 165 170 175
 aaa aga gac aaa att aaa gag atg atg aaa cat gcc tgg gat aat tac 1174
 Lys Arg Asp Lys Ile Lys Glu Met Met Lys His Ala Trp Asp Asn Tyr
 180 185 190 195
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 Arg Thr Tyr Gly Trp Gly His Asn Glu Leu Arg Pro Ile Ala Arg Lys
 200 205 210
 ggc cat tcc act aac ata ttc gga agc tca cag atg ggt gcc acc ata 1270
 Gly His Ser Thr Asn Ile Phe Gly Ser Ser Gln Met Gly Ala Thr Ile
 215 220 225
 gtg gat gct ttg gat acc ctt tat atc atg ggg ctt cat gat gaa ttc 1318
 Val Asp Ala Leu Asp Thr Leu Tyr Ile Met Gly Leu His Asp Glu Phe
 230 235 240
 atg gat ggg caa aga tgg att gaa gaa aac ctt gat ttc agt gtg aat 1366
 Met Asp Gly Gln Arg Trp Ile Glu Glu Asn Leu Asp Phe Ser Val Asn
 245 250 255
 tca gaa gtg tct gtc ttt gaa gtt aac att cgc ttt att gga ggg ctc 1414
 Ser Glu Val Ser Val Phe Glu Val Asn Ile Arg Phe Ile Gly Gly Leu
 260 265 270 275

ctc gct gca tat tac ctg tca gga gag gaa ata ttc aag act aaa gca 1462
 Leu Ala Ala Tyr Tyr Leu Ser Gly Glu Glu Ile Phe Lys Thr Lys Ala
 280 285 290
 gtg cag ttg gct gag aaa ctc ctt cct gcc ttt aac aca cct act ggg 1510
 Val Gln Leu Ala Glu Lys Leu Leu Pro Ala Phe Asn Thr Pro Thr Gly
 295 300 305
 att ccc tgg gca atg gtg aac ctg aaa agt gga gta ggt cga aac tgg 1558
 Ile Pro Trp Ala Met Val Asn Leu Lys Ser Gly Val Gly Arg Asn Trp
 310 315 320
 ggc tgg gcg tct gca ggc agc agc atc ctg gct gag ttc ggc acc ctg 1606
 Gly Trp Ala Ser Ala Gly Ser Ser Ile Leu Ala Glu Phe Gly Thr Leu
 325 330 335
 cac atg gag ttt gtg cac ctc agc tac ttg acc ggt gac ttg act tac 1654
 His Met Glu Phe Val His Leu Ser Tyr Leu Thr Gly Asp Leu Thr Tyr
 340 345 350 355
 tat aat aag gtc atg cac att cgg aaa cta ctg cag aaa atg gaa cgc 1702
 Tyr Asn Lys Val Met His Ile Arg Lys Leu Leu Gln Lys Met Glu Arg
 360 365 370
 cca aat ggt ctt tat cca aat tat tta aac cca aga aca ggg cgc tgg 1750
 Pro Asn Gly Leu Tyr Pro Asn Tyr Leu Asn Pro Arg Thr Gly Arg Trp
 375 380 385
 ggt cag tat cac aca tca gtt ggt ggt ctg gga gat agt ttt tat gaa 1798
 Gly Gln Tyr His Thr Ser Val Gly Gly Leu Gly Asp Ser Phe Tyr Glu
 390 395 400
 tac tta ctg aaa gca tgg ctg acg tca gat aaa aca gac cac gag gca 1846
 Tyr Leu Leu Lys Ala Trp Leu Thr Ser Asp Lys Thr Asp His Glu Ala
 405 410 415
 aga agg atg tat gac gat gct gtt gag gct ata gaa aaa cat ctt att 1894
 Arg Arg Met Tyr Asp Asp Ala Val Glu Ala Ile Glu Lys His Leu Ile

420	425	430	435	
aag aag tcc cga gga ggt ctg gtt ttt att gga gaa tgg aag aat gga	1942			
Lys Lys Ser Arg Gly Gly Leu Val Phe Ile Gly Glu Trp Lys Asn Gly				
440	445	450		
cac ttg gaa agg aag atg ggg cac ttg gcc tgc ttt gct ggg gga atg	1990			
His Leu Glu Arg Lys Met Gly His Leu Ala Cys Phe Ala Gly Gly Met				
455	460	465		
ctt gcc ctt gga gca gat ggt tcc aga aag gat aaa gct ggc cac tac	2038			
Leu Ala Leu Gly Ala Asp Gly Ser Arg Lys Asp Lys Ala Gly His Tyr				
470	475	480		
tta gaa cta ggg gca gaa att gca cga aca tgt cat gag tca tat gac	2086			
Leu Glu Leu Gly Ala Glu Ile Ala Arg Thr Cys His Glu Ser Tyr Asp				
485	490	495		
aga act gca ttg aaa cta ggt ccg gag tca ttc aag ttt gat ggt gca	2134			
Arg Thr Ala Leu Lys Leu Gly Pro Glu Ser Phe Lys Phe Asp Gly Ala				
500	505	510	515	
gtg gaa gcc gtg gct gtg cgg cag gct gaa aag tat tac atc ctt cgt	2182			
Val Glu Ala Val Ala Val Arg Gln Ala Glu Lys Tyr Tyr Ile Leu Arg				
520	525	530		
cca gaa gta att gaa acc tat tgg tat cta tgg cga ttt acc cac gac	2230			
Pro Glu Val Ile Glu Thr Tyr Trp Tyr Leu Trp Arg Phe Thr His Asp				
535	540	545		
cca aga tac agg cag tgg ggc tgg gaa gca gca ctg gct att gag aag	2278			
Pro Arg Tyr Arg Gln Trp Gly Trp Glu Ala Ala Leu Ala Ile Glu Lys				
550	555	560		
tcg tgc cgg gtc agc ggt ggg ttt tct ggt gtc aag gat gta tac gcc	2326			
Ser Cys Arg Val Ser Gly Gly Phe Ser Gly Val Lys Asp Val Tyr Ala				
565	570	575		
ccg acc cct gtg cat gac gac gtg cag cag agc ttt tct ctt gct gaa	2374			

Pro Thr Pro Val His Asp Asp Val Gln Gln Ser Phe Ser Leu Ala Glu
580 585 590 595
aca tta aaa tac ttg tac ctg ctg ttc tct ggc gat gac ctt cta cct 2422
Thr Leu Lys Tyr Leu Tyr Leu Leu Phe Ser Gly Asp Asp Leu Leu Pro
600 605 610
tta gac cac tgg gtg ttt aac aca gag gcg cac cct ctg ccg gtg ttg 2470
Leu Asp His Trp Val Phe Asn Thr Glu Ala His Pro Leu Pro Val Leu
615 620 625
cgc tta gcc aac agc act ctt tca ggt aat cct gct gtc cga tga 2515
Arg Leu Ala Asn Ser Thr Leu Ser Gly Asn Pro Ala Val Arg
630 635 640
gcacagcccc agaaggacca ttcttacctg tgttttggtt acatggacca ctacagagac 2575
tgtctgcaga ggagaggcgg ctgtgggaaa ctgggactct tatgtcagta tgccggatga 2635
aactcttccc tgcaagactt ttcaattgta catatatcaa ctttgaaatt attccatttt 2695
atacctgacc aaaacaagtt ctggtacatg taggacagag acctgatgtg ttttgattct 2755
tactgagatg gccacatgag aaacaatgtc ttattctata ctgtcagtc aagtcaagac 2815
catagagcac cttacaggag ctagagatgg ctttttgaac cagttataca tttgttttct 2875
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ttaacaatgg aacaaaccga atgagcagga accgaggaac atgtiaactac attgtagcaa 2995
gaagacttgg gaaagaaaca aacagatact ggccctgtct gaattttcca gctcttcatt 3055
ggatttttac cagactggca accatttcat tcccaacctg ggcattgaaa tctgtttaga 3115
ttgagctttt ctctgagggg catgatctca tgaagaatat ttttcaagtc gttgtctcca 3175
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gtgcatgta 3244

<210> 790

<211> 641

<212> PRT

<213> Mus musculus

<400> 790

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 Leu Asn Leu Gly Pro Pro Ser Phe Pro His His Arg Ala Thr Leu Arg
 20 25 30
 Leu Ser Glu Lys Phe Ile Leu Leu Leu Ile Leu Ser Ala Phe Ile Thr
 35 40 45
 Leu Cys Phe Gly Ala Phe Phe Phe Leu Pro Asp Ser Ser Lys His Lys
 50 55 60
 Arg Phe Asp Leu Gly Leu Glu Asp Val Leu Ile Pro His Val Asp Ala
 65 70 75 80
 Gly Lys Gly Ala Lys Asn Pro Gly Val Phe Leu Ile His Gly Pro Asp
 85 90 95
 Glu His Arg His Arg Glu Glu Glu Glu Arg Leu Arg Asn Lys Ile Arg
 100 105 110
 Ala Asp His Glu Lys Ala Leu Glu Glu Ala Lys Glu Lys Leu Arg Lys
 115 120 125
 Ser Arg Glu Glu Ile Arg Ala Glu Ile Gln Thr Glu Lys Asn Lys Val
 130 135 140
 Ala Gln Ala Met Lys Thr Lys Glu Thr Arg Val Leu Pro Pro Val Pro
 145 150 155 160
 Val Pro Gln Arg Val Gly Val Ser Gly Gly Asp Pro Glu Asp Met Glu
 165 170 175
 Ile Lys Lys Lys Arg Asp Lys Ile Lys Glu Met Met Lys His Ala Trp
 180 185 190
 Asp Asn Tyr Arg Thr Tyr Gly Trp Gly His Asn Glu Leu Arg Pro Ile
 195 200 205
 Ala Arg Lys Gly His Ser Thr Asn Ile Phe Gly Ser Ser Gln Met Gly

210	215	220
Ala Thr Ile Val Asp	Ala Leu Asp Thr Leu Tyr Ile Met Gly Leu His	
225	230	235 240
Asp Glu Phe Met Asp Gly Gln Arg Trp Ile Glu Glu Asn Leu Asp Phe		
245	250	255
Ser Val Asn Ser Glu Val Ser Val Phe Glu Val Asn Ile Arg Phe Ile		
260	265	270
Gly Gly Leu Leu Ala Ala Tyr Tyr Leu Ser Gly Glu Glu Ile Phe Lys		
275	280	285
Thr Lys Ala Val Gln Leu Ala Glu Lys Leu Leu Pro Ala Phe Asn Thr		
290	295	300
Pro Thr Gly Ile Pro Trp Ala Met Val Asn Leu Lys Ser Gly Val Gly		
305	310	315 320
Arg Asn Trp Gly Trp Ala Ser Ala Gly Ser Ser Ile Leu Ala Glu Phe		
325	330	335
Gly Thr Leu His Met Glu Phe Val His Leu Ser Tyr Leu Thr Gly Asp		
340	345	350
Leu Thr Tyr Tyr Asn Lys Val Met His Ile Arg Lys Leu Leu Gln Lys		
355	360	365
Met Glu Arg Pro Asn Gly Leu Tyr Pro Asn Tyr Leu Asn Pro Arg Thr		
370	375	380
Gly Arg Trp Gly Gln Tyr His Thr Ser Val Gly Gly Leu Gly Asp Ser		
385	390	395 400
Phe Tyr Glu Tyr Leu Leu Lys Ala Trp Leu Thr Ser Asp Lys Thr Asp		
405	410	415
His Glu Ala Arg Arg Met Tyr Asp Asp Ala Val Glu Ala Ile Glu Lys		
420	425	430
His Leu Ile Lys Lys Ser Arg Gly Gly Leu Val Phe Ile Gly Glu Trp		
435	440	445

Lys Asn Gly His Leu Glu Arg Lys Met Gly His Leu Ala Cys Phe Ala
 450 455 460
 Gly Gly Met Leu Ala Leu Gly Ala Asp Gly Ser Arg Lys Asp Lys Ala
 465 470 475 480
 Gly His Tyr Leu Glu Leu Gly Ala Glu Ile Ala Arg Thr Cys His Glu
 485 490 495
 Ser Tyr Asp Arg Thr Ala Leu Lys Leu Gly Pro Glu Ser Phe Lys Phe
 500 505 510
 Asp Gly Ala Val Glu Ala Val Ala Val Arg Gln Ala Glu Lys Tyr Tyr
 515 520 525
 Ile Leu Arg Pro Glu Val Ile Glu Thr Tyr Trp Tyr Leu Trp Arg Phe
 530 535 540
 Thr His Asp Pro Arg Tyr Arg Gln Trp Gly Trp Glu Ala Ala Leu Ala
 545 550 555 560
 Ile Glu Lys Ser Cys Arg Val Ser Gly Gly Phe Ser Gly Val Lys Asp
 565 570 575
 Val Tyr Ala Pro Thr Pro Val His Asp Asp Val Gln Gln Ser Phe Ser
 580 585 590
 Leu Ala Glu Thr Leu Lys Tyr Leu Tyr Leu Leu Phe Ser Gly Asp Asp
 595 600 605
 Leu Leu Pro Leu Asp His Trp Val Phe Asn Thr Glu Ala His Pro Leu
 610 615 620
 Pro Val Leu Arg Leu Ala Asn Ser Thr Leu Ser Gly Asn Pro Ala Val
 625 630 635 640
 Arg

<210> 791

<211> 416

<212> DNA

<213> Mus musculus

<400> 791

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gtagtcttca ctigtcttc agctgacct ggtgtctcca tccgttggct ctccaataag 60
cagagtctgc agctcacaga gagaatgaca ctttcccat caaagtgcc actcagcata 120
gatcctgtct ggaggagga tgcctgaaag tatcaatgtg aggtctcaa cccagtcagt 180
tcaaagtcca gtctccagt cgtctggct gtgatagaag agtgacctct ctctctcat 240
cctacagcag agtggagtca tttccttatt gatggggtgc aaaatggaga tgagtcaagt 300
ggtaaaagtt gtcagttacc actcaagtac tgccttcatt gtaactcata cctgtagtcc 360
tgacataatc atgtgtggaa ggacaggcca tgatttaatg tgaacatgtt tticaa 416

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<210> 792

<211> 567

<212> DNA

<213> Mus musculus

<400> 792

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agccaagtga tcagtgtga ggaattctgg gccaatcgtt taaatgtgaa tgcaacagat 120
agttctacat ccagtcacaa gcaggatgtt ggtatttctg cagcatttct ggctgatgtc 180
cggccccaaa cggatggctg taatggctcg agatataatt taacttctga tatcattgaa 240
tctatatitaa ggacctatcc agcagtaaaa atgaaatatg cagaaactgt accacacaac 300
atgacagaaa aggagtctcg gacacgcttt ttccagtccc attattttca cagggaccga 360
ctaaatacag gatcgaagga cctctttgca gaatgtgcca aaatagatga gaagggatta 420
aaaacaatgg ttctattagg agtgaaaaac caatgctaga ttgacatcg ttggaagatt 480
agcattagac gagggctatt gcatttctc tgtgccatct acttcgattc caaatccata 540
aggagatag taatgctgca tcatcaa 567

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<210> 793

<211> 1093

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (14).. (859)

<400> 793

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      Met Glu Arg Pro Pro Arg Ala Leu Leu Leu Gly Ala
              1              5              10
gcc gga ctg ctg ctc ctg ctc ctg ccc ctc tcc tct tcc tcc tct tcg      97
Ala Gly Leu Leu Leu Leu Leu Leu Pro Leu Ser Ser Ser Ser Ser Ser
      15              20              25
gat gcc tgc ggc ccg tgc gtg ccg gcc tcc tgc ccc gcg ctg ccc cgg      145
Asp Ala Cys Gly Pro Cys Val Pro Ala Ser Cys Pro Ala Leu Pro Arg
      30              35              40
ctc ggc tgc ccg ctg ggt gag acc cgc gac gcg tgc ggg tgc tgc ccg      193
Leu Gly Cys Pro Leu Gly Glu Thr Arg Asp Ala Cys Gly Cys Cys Pro
      45              50              55              60
gtg tgt gct cgc ggc gag ggt gag ccg tgc ggg ggc ggc gcg gcc ggc      241
Val Cys Ala Arg Gly Glu Gly Glu Pro Cys Gly Gly Gly Ala Ala Gly
              65              70              75
agg ggg cac tgc gcg ccg ggc atg gag tgc gtg aag agc cgc aag agg      289
Arg Gly His Cys Ala Pro Gly Met Glu Cys Val Lys Ser Arg Lys Arg
              80              85              90
cgg agg ggt aaa gcc ggg gca gca gcc ggc ggt ccc gcg acc ctc gcc      337
Arg Arg Gly Lys Ala Gly Ala Ala Ala Gly Gly Pro Ala Thr Leu Ala

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95	100	105	
gtg tgc gtg tgc aag agc cgc tac ccg gtg tgc ggc agc aac ggc atc			385
Val Cys Val Cys Lys Ser Arg Tyr Pro Val Cys Gly Ser Asn Gly Ile			
110	115	120	
acc tac ccc agc ggc tgc cag ctg cgc gct gcc agc ctg cgc gcc gag			433
Thr Tyr Pro Ser Gly Cys Gln Leu Arg Ala Ala Ser Leu Arg Ala Glu			
125	130	135	140
agc cgc ggg gag aag ccc atc acc cag gtc agc aag ggc acc tgc gag			481
Ser Arg Gly Glu Lys Pro Ile Thr Gln Val Ser Lys Gly Thr Cys Glu			
145	150	155	
caa ggt cct tcc ata gtg acg ccc ccc aag gac atc tgg aac gtc act			529
Gln Gly Pro Ser Ile Val Thr Pro Pro Lys Asp Ile Trp Asn Val Thr			
160	165	170	
ggt gcc aag gtg ttc ttg agc tgt gag gtc atc ggg atc cca acc cct			577
Gly Ala Lys Val Phe Leu Ser Cys Glu Val Ile Gly Ile Pro Thr Pro			
175	180	185	
gtc ctc atc tgg aac aag gta aaa agg gat cac tct gga gtt cag cgg			625
Val Leu Ile Trp Asn Lys Val Lys Arg Asp His Ser Gly Val Gln Arg			
190	195	200	
aca gaa ctc ttg cct ggt gac cgg gaa aat ctg gcc att cag acc cgg			673
Thr Glu Leu Leu Pro Gly Asp Arg Glu Asn Leu Ala Ile Gln Thr Arg			
205	210	215	220
ggt ggt cca gaa aag cat gaa gta acg ggc tgg gtg ctg gta tct cct			721
Gly Gly Pro Glu Lys His Glu Val Thr Gly Trp Val Leu Val Ser Pro			
225	230	235	
cta agt aag gag gac gct gga gag tat gag tgc cac gca tcc aac tcc			769
Leu Ser Lys Glu Asp Ala Gly Glu Tyr Glu Cys His Ala Ser Asn Ser			
240	245	250	

caa ggg cag gct tcc gcg gca gcc aaa att aca gtg gtt gat gcc ctc 817
 Gln Gly Gln Ala Ser Ala Ala Ala Lys Ile Thr Val Val Asp Ala Leu

255

260

265

cat gaa ata cca ctg aaa aaa ggt gaa ggt gct cag tta taa 859

His Glu Ile Pro Leu Lys Lys Gly Glu Gly Ala Gln Leu

270

275

280

cctgcgaatc catgagcctc tgtagctaag gtgcctcag acagccgaca gctataaccc 919

tgctcttgcc tgacacactt ccttaacct aaccactaa cactttatta cagccagctg 979

gttttacaca gagaaatcaa agataacaca tcaagactat ctacaaaaat ttattattta 1039

cagaaaaaag cacatgtagc tttaaacaaa acaataaaa ttcttatcac aaca 1093

<210> 794

<211> 281

<212> PRT

<213> Mus musculus

<400> 794

Met Glu Arg Pro Pro Arg Ala Leu Leu Leu Gly Ala Ala Gly Leu Leu

1

5

10

15

Leu Leu Leu Leu Pro Leu Ser Ser Ser Ser Ser Ser Asp Ala Cys Gly

20

25

30

Pro Cys Val Pro Ala Ser Cys Pro Ala Leu Pro Arg Leu Gly Cys Pro

35

40

45

Leu Gly Glu Thr Arg Asp Ala Cys Gly Cys Cys Pro Val Cys Ala Arg

50

55

60

Gly Glu Gly Glu Pro Cys Gly Gly Gly Ala Ala Gly Arg Gly His Cys

65

70

75

80

Ala Pro Gly Met Glu Cys Val Lys Ser Arg Lys Arg Arg Arg Gly Lys

85

90

95

Ala Gly Ala Ala Ala Gly Gly Pro Ala Thr Leu Ala Val Cys Val Cys
100 105 110

Lys Ser Arg Tyr Pro Val Cys Gly Ser Asn Gly Ile Thr Tyr Pro Ser
115 120 125

Gly Cys Gln Leu Arg Ala Ala Ser Leu Arg Ala Glu Ser Arg Gly Glu
130 135 140

Lys Pro Ile Thr Gln Val Ser Lys Gly Thr Cys Glu Gln Gly Pro Ser
145 150 155 160

Ile Val Thr Pro Pro Lys Asp Ile Trp Asn Val Thr Gly Ala Lys Val
165 170 175

Phe Leu Ser Cys Glu Val Ile Gly Ile Pro Thr Pro Val Leu Ile Trp
180 185 190

Asn Lys Val Lys Arg Asp His Ser Gly Val Gln Arg Thr Glu Leu Leu
195 200 205

Pro Gly Asp Arg Glu Asn Leu Ala Ile Gln Thr Arg Gly Gly Pro Glu
210 215 220

Lys His Glu Val Thr Gly Trp Val Leu Val Ser Pro Leu Ser Lys Glu
225 230 235 240

Asp Ala Gly Glu Tyr Glu Cys His Ala Ser Asn Ser Gln Gly Gln Ala
245 250 255

Ser Ala Ala Ala Lys Ile Thr Val Val Asp Ala Leu His Glu Ile Pro
260 265 270

Leu Lys Lys Gly Glu Gly Ala Gln Leu
275 280

<210> 795

<211> 4602

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (160).. (3957)

<400> 795

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acctgcctcg ccgggagata gtggataacc tccttcaaa atg gaa gat gga aag 174
                                         Met Glu Asp Gly Lys
                                         1           5
ccc gtt tgg gca ccc cac ccc aca gat gga ttt cag atg ggc aat att 222
Pro Val Trp Ala Pro His Pro Thr Asp Gly Phe Gln Met Gly Asn Ile
                10                15                20
gtg gat att ggc cct gac agc tta aca att gaa cct ttg aac caa aaa 270
Val Asp Ile Gly Pro Asp Ser Leu Thr Ile Glu Pro Leu Asn Gln Lys
                25                30                35
ggc aag aca ttt ggg gct ctc ata aac caa gia ttt cct gca gaa gag 318
Gly Lys Thr Phe Gly Ala Leu Ile Asn Gln Val Phe Pro Ala Glu Glu
                40                45                50
gac agc aaa aaa gat gtg gaa gat aac tgt tca ctg atg tac tta aat 366
Asp Ser Lys Lys Asp Val Glu Asp Asn Cys Ser Leu Met Tyr Leu Asn
                55                60                65
gaa gcc aca ctc ctc cac aat gtc aaa gtt cgg tac agt aaa gac aga 414
Glu Ala Thr Leu Leu His Asn Val Lys Val Arg Tyr Ser Lys Asp Arg
                70                75                80                85
atc tat aca tat gtg gcc aac att ctg att gca gtg aat cca tac ttt 462
Ile Tyr Thr Tyr Val Ala Asn Ile Leu Ile Ala Val Asn Pro Tyr Phe
                90                95                100

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gat ata cct aag ata tat tct tca gat aca ata aag tca tat caa gga 510
Asp Ile Pro Lys Ile Tyr Ser Ser Asp Thr Ile Lys Ser Tyr Gln Gly
105 110 115
aaa tct ctt ggg acg atg cca ccc cat gtc ttt ggc att gct gat aaa 558
Lys Ser Leu Gly Thr Met Pro Pro His Val Phe Gly Ile Ala Asp Lys
120 125 130
gct ttc cga gac atg aag gtg ctc aag atg agc cag tct atc atc gta 606
Ala Phe Arg Asp Met Lys Val Leu Lys Met Ser Gln Ser Ile Ile Val
135 140 145
tct gga gaa tca gga gct ggc aaa aca gaa aat aca aag ttt ggt tct 654
Ser Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn Thr Lys Phe Gly Ser
150 155 160 165
aag ata cct gac aga atc tta tgg aca ggt caa gat att gat gat aga 702
Lys Ile Pro Asp Arg Ile Leu Trp Thr Gly Gln Asp Ile Asp Asp Arg
170 175 180
att gtt gaa gcg aat cca ctt tta gaa gca ttt gga aat gca aag act 750
Ile Val Glu Ala Asn Pro Leu Leu Glu Ala Phe Gly Asn Ala Lys Thr
185 190 195
gtt cgc aac aat aat agc agt cga ttt gga aaa ttt gta gaa att cat 798
Val Arg Asn Asn Asn Ser Ser Arg Phe Gly Lys Phe Val Glu Ile His
200 205 210
ttc aat gaa aag agt tcg gtt gtt gga gga ttt gtt tcc cat tac ctt 846
Phe Asn Glu Lys Ser Ser Val Val Gly Gly Phe Val Ser His Tyr Leu
215 220 225
cta gag aag tct agg atc tgt gtt caa ggc aaa gag gag cgg aat cac 894
Leu Glu Lys Ser Arg Ile Cys Val Gln Gly Lys Glu Glu Arg Asn His
230 235 240 245
cat att ttc tac agg ctc tgt gct ggg gct tca gaa gac atc agg gag 942
His Ile Phe Tyr Arg Leu Cys Ala Gly Ala Ser Glu Asp Ile Arg Glu

250	255	260	
aag ctt cac ttg agc tcc cca gat aat ttc cgg tat tta aac cgg ggc			990
Lys Leu His Leu Ser Ser Pro Asp Asn Phe Arg Tyr Leu Asn Arg Gly			
265	270	275	
tgc act aga ttc ttc gct aac aaa gaa acg gac aaa cag att tta cag			1038
Cys Thr Arg Phe Phe Ala Asn Lys Glu Thr Asp Lys Gln Ile Leu Gln			
280	285	290	
aac cga aaa agt cct gag tat gtt aag gca ggt tcc ttg gaa gga tcc			1086
Asn Arg Lys Ser Pro Glu Tyr Val Lys Ala Gly Ser Leu Glu Gly Ser			
295	300	305	
tct att aga cga cca tgg aga ttt tat cag gat gtg cac agc cat gaa			1134
Ser Ile Arg Arg Pro Trp Arg Phe Tyr Gln Asp Val His Ser His Glu			
310	315	320	325
aaa aat tgg ttt ggg atg atg aag aaa aac ttt gat ctg ttt cga gtt			1182
Lys Asn Trp Phe Gly Met Met Lys Lys Asn Phe Asp Leu Phe Arg Val			
330	335	340	
gta gct ggt gtc ctg cac ctt gga aat att gat ttg gag gaa gcc gga			1230
Val Ala Gly Val Leu His Leu Gly Asn Ile Asp Leu Glu Glu Ala Gly			
345	350	355	
agc act tca ggt ggc tgc aat ctg aag aac aaa tct gcc cca tcc ctg			1278
Ser Thr Ser Gly Gly Cys Asn Leu Lys Asn Lys Ser Ala Pro Ser Leu			
360	365	370	
gaa tac tgt gct gag ctg ctg ggc ttg gac caa gat gat ctt cga gtc			1326
Glu Tyr Cys Ala Glu Leu Leu Gly Leu Asp Gln Asp Asp Leu Arg Val			
375	380	385	
agt tta acc act cga gtc atg ctc acc aca gca ggg ggg acc aaa gga			1374
Ser Leu Thr Thr Arg Val Met Leu Thr Thr Ala Gly Gly Thr Lys Gly			
390	395	400	405
acc gtt ata aag gtc ccc ctg aaa gtg gag cag gca aac aat gct cgc			1422

Thr Val Ile Lys Val Pro Leu Lys Val Glu Gln Ala Asn Asn Ala Arg
 410 415 420
 gat gct ctg gca aag act gtc tat agc cat ctc ttt gat cac gtg gtg 1470
 Asp Ala Leu Ala Lys Thr Val Tyr Ser His Leu Phe Asp His Val Val
 425 430 435
 aac agg gta aat cag tgc ttt cct ttt gaa aca tct tct tat ttt att 1518
 Asn Arg Val Asn Gln Cys Phe Pro Phe Glu Thr Ser Ser Tyr Phe Ile
 440 445 450
 gga gtc ctg gat att gct ggt ttc gag tac ttt gag cac aac agc ttc 1566
 Gly Val Leu Asp Ile Ala Gly Phe Glu Tyr Phe Glu His Asn Ser Phe
 455 460 465
 gag caa ttt tgt atc aac tat tgc aat gag aaa ctc caa cag ttt ttt 1614
 Glu Gln Phe Cys Ile Asn Tyr Cys Asn Glu Lys Leu Gln Gln Phe Phe
 470 475 480 485
 aat gaa agg atc ctg aag gag gaa caa gaa ctg tat cag aaa gag ggc 1662
 Asn Glu Arg Ile Leu Lys Glu Glu Gln Glu Leu Tyr Gln Lys Glu Gly
 490 495 500
 ctg ggt gtt aat gaa gtc cat tac gtg gac aat cag gac tgc ata gaa 1710
 Leu Gly Val Asn Glu Val His Tyr Val Asp Asn Gln Asp Cys Ile Glu
 505 510 515
 tta atc gaa gtg aag tta gtg ggg atc ctg gat att ctg gat gaa gaa 1758
 Leu Ile Glu Val Lys Leu Val Gly Ile Leu Asp Ile Leu Asp Glu Glu
 520 525 530
 aat cgt ctt ccc cag ccg agt gac cag cac ttc acg tct gtg gtt cac 1806
 Asn Arg Leu Pro Gln Pro Ser Asp Gln His Phe Thr Ser Val Val His
 535 540 545
 cag aag cac aaa gac cac ttc cgg ctc act att ccc agg aaa tct aag 1854
 Gln Lys His Lys Asp His Phe Arg Leu Thr Ile Pro Arg Lys Ser Lys
 550 555 560 565

ctg gca gtc cac agg aac ctc aga gac gat gaa ggc ttt atc atc agg	1902
Leu Ala Val His Arg Asn Leu Arg Asp Asp Glu Gly Phe Ile Ile Arg	
570 575 580	
caa ctt tgc agg ggc cgt gtg cta cgg aga caa ccc cag tat ggg gga	1950
Gln Leu Cys Arg Gly Arg Val Leu Arg Arg Gln Pro Gln Tyr Gly Gly	
585 590 595	
gga aaa aat aat gat gca cta cat atg tct ctt gaa tcc ttg ata tgt	1998
Gly Lys Asn Asn Asp Ala Leu His Met Ser Leu Glu Ser Leu Ile Cys	
600 605 610	
gag tcc agg gat aag ttt ata agg gca tta ttt gag tca tct aca aat	2046
Glu Ser Arg Asp Lys Phe Ile Arg Ala Leu Phe Glu Ser Ser Thr Asn	
615 620 625	
aac agc aaa gat acg aaa cag aag gct gga aaa ctt agc ttc atc agc	2094
Asn Ser Lys Asp Thr Lys Gln Lys Ala Gly Lys Leu Ser Phe Ile Ser	
630 635 640 645	
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cga agt acc gga gcc agc ttc atc cgc tgc atc aaa ccc aac tta aag	2190
Arg Ser Thr Gly Ala Ser Phe Ile Arg Cys Ile Lys Pro Asn Leu Lys	
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Met Ala Ser His His Phe Glu Gly Ala Gln Ile Leu Ser Gln Leu Gln	
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Cys Ser Gly Met Val Ser Val Leu Asp Leu Met Gln Gly Gly Phe Pro	
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Ser Arg Ala Ser Phe His Glu Leu Tyr Asn Met Tyr Lys Lys Tyr Met	

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Pro Glu Lys Leu	Pro Arg Leu Asp Pro Arg Leu Phe Cys Lys Pro Leu			
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Phe Lys Ala Leu Gly Leu Asn Glu Val Asp Tyr Lys Phe Gly Leu Thr				
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Gln Val Phe Phe Arg Pro Gly Lys Phe Ala Glu Phe Asp Gln Ile Met				
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Lys Ser Asp Pro Asp His Leu Ala Glu Leu Val Lys Arg Val Asn Leu				
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Trp Leu Val Cys Ser Arg Trp Lys Lys Val Gln Trp Cys Ser Leu Ser				
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Val Ile Lys Leu Lys Asn Lys Ile Lys Tyr Arg Ala Glu Ala Cys Ile				
	810	815	820	
aaa atg cag aaa ccc atc cga atg tgg ctt tgc aaa agg agg cac aac				2670
Lys Met Gln Lys Pro Ile Arg Met Trp Leu Cys Lys Arg Arg His Asn				
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Pro Arg Ile Asp Gly Leu Val Lys Val Gly Thr Leu Lys Lys Arg Leu				
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Asp Lys Phe Asn Glu Val Val Ser Ala Leu Lys Asp Gly Lys Pro Glu				
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Ala Glu Ile Leu Pro Arg Gln Phe Glu Glu Ile Trp Glu Arg Cys Gly			
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ggc atc cag tac ctt cag agc gcc att gag agc agg cag gcc cgg ccc			3918
Gly Ile Gln Tyr Leu Gln Ser Ala Ile Glu Ser Arg Gln Ala Arg Pro			
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acc tat gct acg gcc atg ctg cag aac ctg ctc aag tag accggagggt			3967
Thr Tyr Ala Thr Ala Met Leu Gln Asn Leu Leu Lys			
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Phe Pro Ala Glu Glu Asp Ser Lys Lys Asp Val Glu Asp Asn Cys Ser
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Gln Ser Ile Ile Val Ser Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn
      145            150            155            160
Thr Lys Phe Gly Ser Lys Ile Pro Asp Arg Ile Leu Trp Thr Gly Gln
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Asp Ile Asp Asp Arg Ile Val Glu Ala Asn Pro Leu Leu Glu Ala Phe
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Ile Leu Asp Glu Glu Asn Arg Leu Pro Gln Pro Ser Asp Gln His Phe		
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Leu Glu Met Glu Pro Lys Arg Lys Gln Glu Glu Glu Glu Arg Lys Lys					
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Ala Arg Gln Arg Glu Glu Glu Ser Gln Gln Gln Ala Val Leu Ala Gln					
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Glu Cys Arg Asp Arg Glu Leu Ala Leu Arg Ile Ala Gln Asn Glu Ser					
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Leu Ser Lys Trp Lys Tyr Ala Glu Leu Arg Asp Thr Ile Asn Thr Ser					
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Cys Asp Ile Glu Leu Leu Ala Ala Cys Arg Glu Glu Phe His Arg Arg					
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Leu Lys Val Tyr His Ala Trp Lys Ser Lys Asn Lys Lys Arg Asn Thr					
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Glu Thr Glu Gln Arg Ala Pro Lys Ser Val Thr Asp Tyr Asp Phe Ala					
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<210> 798

<211> 526

<212> PRT

<213> Mus musculus

<400> 798

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Leu	Thr	Val	Asn	Gly	Lys	His	Ser	Leu	Ser	Trp	Glu	Ser	Pro	Gln	Gly
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Pro	Gly	Cys	Gly	Leu	Gln	Asn	Thr	Gly	Asn	Ser	Cys	Tyr	Leu	Asn	Ala
		50				55					60				
Ala	Leu	Gln	Cys	Leu	Thr	His	Thr	Pro	Pro	Leu	Ala	Asp	Tyr	Met	Leu
	65				70					75				80	
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				85						90				95	
Cys	Ala	Met	Glu	Ala	Leu	Val	Thr	Gln	Ser	Leu	Leu	His	Ser	His	Ser
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Gly	Asp	Val	Met	Lys	Pro	Ser	His	Ile	Leu	Thr	Ser	Ala	Phe	His	Lys
			115						120					125	
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 Glu Asp Ser Ser Pro Ile His Asp Ile Phe Gly Gly Trp Trp Arg Ser
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 Gln Ile Lys Cys Leu Leu Cys Gln Gly Thr Ser Asp Thr Tyr Asp Arg
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 Phe Leu Asp Ile Pro Leu Asp Ile Ser Ser Ala Gln Ser Val Lys Gln
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 Ala Leu Trp Asp Thr Glu Lys Ser Glu Glu Leu Cys Gly Asp Asn Ala
 210 215 220
 Tyr Tyr Cys Gly Lys Cys Arg Gln Lys Met Pro Ala Ser Lys Thr Leu
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 His Val His Ile Ala Pro Lys Val Leu Met Val Val Leu Asn Arg Phe
 245 250 255
 Ser Ala Phe Thr Gly Asn Lys Leu Asp Arg Lys Val Ser Tyr Pro Glu
 260 265 270
 Phe Leu Asp Leu Lys Pro Tyr Leu Ser Glu Pro Thr Gly Gly Pro Leu
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 Pro Tyr Ala Leu Tyr Ala Val Leu Val His Asp Gly Ala Thr Ser His
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 Ser Gly His Tyr Phe Cys Cys Val Lys Ala Gly His Gly Lys Trp Tyr
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 Lys Met Asp Asp Thr Lys Val Thr Arg Cys Asp Val Thr Ser Val Leu
 325 330 335
 Asn Glu Asn Ala Tyr Val Leu Phe Tyr Val Gln Gln Ala Asn Leu Lys
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 Gln Val Ser Ile Asp Met Pro Glu Gly Arg Ile Asn Glu Val Leu Asp
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 Pro Glu Tyr Gln Leu Lys Lys Ser Arg Arg Lys Lys His Lys Lys Lys

370	375	380
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385	390	395
Arg Ala Ile Lys Glu Thr Ser Leu Gly Lys Gly Lys Val Leu Gln Glu		
405	410	415
Val Asn His Lys Lys Ala Gly Gln Lys His Gly Asn Thr Lys Leu Met		
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Pro Gln Lys Gln Asn His Gln Lys Ala Gly Gln Asn Leu Arg Asn Thr		
435	440	445
Glu Val Glu Leu Asp Leu Pro Ala Asp Ala Ile Val Ile His Gln Pro		
450	455	460
Arg Ser Thr Ala Asn Trp Gly Arg Asp Ser Pro Asp Lys Glu Asn Gln		
465	470	475
Pro Leu His Asn Ala Asp Arg Leu Leu Thr Ser Gln Gly Pro Val Asn		
485	490	495
Thr Trp Gln Leu Cys Arg Gln Glu Gly Arg Arg Arg Ser Lys Lys Gly		
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<210> 799

<211> 2024

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (149).. (1342)

<400> 799

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ggacgggctg tccttggttg aaggaacc atg aat tgg cat ttt cct ttc ttc 172
Met Asn Trp His Phe Pro Phe Phe
1 5
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Ile Leu Thr Thr Val Thr Leu Tyr Ser Val His Ser Gln Phe Asn Ser
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Leu Ser Leu Glu Glu Leu Gly Ser Asn Thr Gly Ile Gln Val Phe Asn
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cag atc atc aag tca cgg cct cat gag aac gtt gtt gtc tcc cca cat 316
Gln Ile Ile Lys Ser Arg Pro His Glu Asn Val Val Val Ser Pro His
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Gly Ile Ala Ser Ile Leu Gly Met Leu Gln Leu Gly Ala Asp Gly Lys
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Thr Lys Lys Gln Leu Ser Thr Val Met Arg Tyr Asn Val Asn Gly Val
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Gly Lys Val Leu Lys Lys Ile Asn Lys Ala Ile Val Ser Lys Lys Asn
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Lys Asp Ile Val Thr Val Ala Asn Ala Val Phe Leu Arg Asn Gly Phe
105 110 115 120
aaa atg gaa gtg cct ttt gca gta agg aac aaa gat gtg ttt cag tgt 556
Lys Met Glu Val Pro Phe Ala Val Arg Asn Lys Asp Val Phe Gln Cys

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125	130	135	
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Ile Asn Phe Trp Val Lys Asn Glu Thr Arg Gly Met Ile Asp Asn Leu			
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ctt tcc cca aat ctg atc gat ggt gcc ctt acc agg ctg gtc ctc gtt	700		
Leu Ser Pro Asn Leu Ile Asp Gly Ala Leu Thr Arg Leu Val Leu Val			
170	175	180	
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Ser Thr Lys Lys Arg Thr Phe Val Ala Gly Asp Gly Lys Ser Tyr Gln			
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Glu Ser Ile Ser Met Leu Ile Ala Leu Pro Thr Glu Ser Ser Thr Pro			
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ctg tct gcc atc atc cct cac atc act acc aag acc att gat agc tgg	988		
Leu Ser Ala Ile Ile Pro His Ile Thr Thr Lys Thr Ile Asp Ser Trp			
265	270	275	280
atg aac acc atg gta ccc aag agg atg cag ctg gtc cta ccc aag ttc	1036		

Met Asn Thr Met Val Pro Lys Arg Met Gln Leu Val Leu Pro Lys Phe
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 Ile Thr Glu Met Phe Glu Pro Ser Lys Ala Asn Phe Thr Lys Ile Thr
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 Glu Val Ser Glu Asp Gly Thr Lys Ala Ser Ala Ala Thr Thr Ala Ile
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 Leu Phe Ser Ile Arg His Asn Pro Thr Gly Ala Ile Leu Phe Leu Gly
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 Gln Val Asn Lys Pro
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<210> 800

<211> 397

<212> PRT

<213> Mus musculus

<400> 800

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				20					25					30	
Asn	Thr	Gly	Ile	Gln	Val	Phe	Asn	Gln	Ile	Ile	Lys	Ser	Arg	Pro	His
				35					40					45	
Glu	Asn	Val	Val	Val	Ser	Pro	His	Gly	Ile	Ala	Ser	Ile	Leu	Gly	Met
				50					55					60	
Leu	Gln	Leu	Gly	Ala	Asp	Gly	Lys	Thr	Lys	Lys	Gln	Leu	Ser	Thr	Val
				65					70					75	
Met	Arg	Tyr	Asn	Val	Asn	Gly	Val	Gly	Lys	Val	Leu	Lys	Lys	Ile	Asn
				85					90					95	
Lys	Ala	Ile	Val	Ser	Lys	Lys	Asn	Lys	Asp	Ile	Val	Thr	Val	Ala	Asn
				100					105					110	
Ala	Val	Phe	Leu	Arg	Asn	Gly	Phe	Lys	Met	Glu	Val	Pro	Phe	Ala	Val
				115					120					125	
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Thr Arg Gly Met Ile Asp Asn Leu Leu Ser Pro Asn Leu Ile Asp Gly		
165	170	175
Ala Leu Thr Arg Leu Val Leu Val Asn Ala Val Tyr Phe Lys Gly Leu		
180	185	190
Trp Lys Ser Arg Phe Gln Pro Glu Ser Thr Lys Lys Arg Thr Phe Val		
195	200	205
Ala Gly Asp Gly Lys Ser Tyr Gln Val Pro Met Leu Ala Gln Leu Ser		
210	215	220
Val Phe Arg Ser Gly Ser Thr Arg Thr Pro Asn Gly Leu Trp Tyr Asn		
225	230	235 240
Phe Ile Glu Leu Pro Tyr His Gly Glu Ser Ile Ser Met Leu Ile Ala		
245	250	255
Leu Pro Thr Glu Ser Ser Thr Pro Leu Ser Ala Ile Ile Pro His Ile		
260	265	270
Thr Thr Lys Thr Ile Asp Ser Trp Met Asn Thr Met Val Pro Lys Arg		
275	280	285
Met Gln Leu Val Leu Pro Lys Phe Thr Ala Val Ala Gln Thr Asp Leu		
290	295	300
Lys Glu Pro Leu Lys Ala Leu Gly Ile Thr Glu Met Phe Glu Pro Ser		
305	310	315 320
Lys Ala Asn Phe Thr Lys Ile Thr Arg Ser Glu Ser Leu His Val Ser		
325	330	335
His Ile Leu Gln Lys Ala Lys Ile Glu Val Ser Glu Asp Gly Thr Lys		
340	345	350
Ala Ser Ala Ala Thr Thr Ala Ile Leu Ile Ala Arg Ser Ser Pro Pro		
355	360	365

Trp Phe Ile Val Asp Arg Pro Phe Leu Phe Ser Ile Arg His Asn Pro

370

375

380

Thr Gly Ala Ile Leu Phe Leu Gly Gln Val Asn Lys Pro

385

390

395

<210> 801

<211> 630

<212> DNA

<213> Mus musculus

<400> 801

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<210> 802

<211> 281

<212> DNA

<213> Mus musculus

<400> 802

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<210> 803

<211> 1472

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (162).. (1094)

<400> 803

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 tcggcgaagc ccaggagaca gcggaggaat ttaatcgaga a atg ttt tgg aga aga 176

Met Phe Trp Arg Arg

1 5

ctc aat gag gca gca gtg aaa gtg aac ggg gaa gcc act gtt ctg aca 224
 Leu Asn Glu Ala Ala Val Lys Val Asn Gly Glu Ala Thr Val Leu Thr

10 15 20

acg cac ttc tct aaa ctt cca tgg cca tct cca cag gaa acc cag agg 272
 Thr His Phe Ser Lys Leu Pro Trp Pro Ser Pro Gln Glu Thr Gln Arg

25 30 35

atc tgt gag caa gtc cgt att gcc atc gag gaa ata att ata gtg tat 320
 Ile Cys Glu Gln Val Arg Ile Ala Ile Glu Glu Ile Ile Ile Val Tyr

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tat tca ctt cct aag gac cag gga atc acc ctg aga aag ctg gta cgg	368		
Tyr Ser Leu Pro Lys Asp Gln Gly Ile Thr Leu Arg Lys Leu Val Arg			
55	60	65	
aat gct gcc ctg gac atc gtg gac ggc atg gct cag ctc ctg gaa gtg	416		
Asn Ala Ala Leu Asp Ile Val Asp Gly Met Ala Gln Leu Leu Glu Val			
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ctt ctt act gct cca tct cag agc act gag aat ggt gac ctg att tcc	464		
Leu Leu Thr Ala Pro Ser Gln Ser Thr Glu Asn Gly Asp Leu Ile Ser			
90	95	100	
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Cys Asn Ser Val Ser Val Ala Cys Gln Gln Val Pro Glu Ile Pro Lys			
105	110	115	
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Asp Asn Lys Ala Ala Ala Leu Leu Met Leu Thr Lys Ser Val Asp Phe			
120	125	130	
gtg aaa gat gca cat gaa gaa atg gag cag gct gta gaa gaa tgt gac	608		
Val Lys Asp Ala His Glu Glu Met Glu Gln Ala Val Glu Glu Cys Asp			
135	140	145	
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Pro Tyr Ser Gly Leu Leu Asn Asp Ser Glu Asp Asn Ser Asp Ser His			
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Ser Asp Glu Asp Gly Val Leu Gly Leu Pro Ser Asn Arg Asp Ser Tyr			
170	175	180	
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Trp Ser Glu Glu Asp Gln Glu Leu Ile Ile Pro Cys Leu Ala Leu Val			
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 Asp His Cys Met Asn Arg Ile Lys Ala Leu Thr Gln Arg Ala Ala Glu
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 Leu
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<211> 310

<212> PRT

<213> Mus musculus

<400> 804

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			20						25					30	
Gln	Glu	Thr	Gln	Arg	Ile	Cys	Glu	Gln	Val	Arg	Ile	Ala	Ile	Glu	Glu
			35				40						45		
Ile	Ile	Ile	Val	Tyr	Tyr	Ser	Leu	Pro	Lys	Asp	Gln	Gly	Ile	Thr	Leu
	50					55					60				
Arg	Lys	Leu	Val	Arg	Asn	Ala	Ala	Leu	Asp	Ile	Val	Asp	Gly	Met	Ala
	65				70					75				80	
Gln	Leu	Leu	Glu	Val	Leu	Leu	Thr	Ala	Pro	Ser	Gln	Ser	Thr	Glu	Asn
				85					90					95	
Gly	Asp	Leu	Ile	Ser	Cys	Asn	Ser	Val	Ser	Val	Ala	Cys	Gln	Gln	Val
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Pro	Glu	Ile	Pro	Lys	Asp	Asn	Lys	Ala	Ala	Ala	Leu	Leu	Met	Leu	Thr
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Lys	Ser	Val	Asp	Phe	Val	Lys	Asp	Ala	His	Glu	Glu	Met	Glu	Gln	Ala
		130					135						140		
Val	Glu	Glu	Cys	Asp	Pro	Tyr	Ser	Gly	Leu	Leu	Asn	Asp	Ser	Glu	Asp
	145				150					155				160	
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				165					170					175	

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 225 230 235 240
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 Ser Ser Ala Lys Leu Val Ser Val Leu Ile Lys Ala Leu Glu Ile Thr
 260 265 270
 Lys Ala Ser His Val Ser Pro His Pro Gly Asp Ser Trp Ile Pro Leu
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<210> 805

<211> 1880

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (81).. (1604)

<400> 805

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 Leu Ser Ala Leu Phe Leu Leu Thr Arg Arg Thr Arg Arg Pro Arg Glu
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 Pro Pro Leu Ile Lys Gly Trp Leu Pro Tyr Leu Gly Met Ala Leu Lys
 45 50 55
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 Phe Phe Lys Asp Pro Leu Thr Phe Leu Lys Thr Leu Gln Arg Gln His
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 Gly Asp Thr Phe Thr Val Phe Leu Val Gly Lys Tyr Ile Thr Phe Val
 80 85 90
 ctg aac cct ttc cag tac cag tat gta acg aaa aac cca aaa caa tta 401
 Leu Asn Pro Phe Gln Tyr Gln Tyr Val Thr Lys Asn Pro Lys Gln Leu
 95 100 105
 agc ttt cag aag ttc agc agc cga tia tca gcg aaa gcc ttc tct gta 449
 Ser Phe Gln Lys Phe Ser Ser Arg Leu Ser Ala Lys Ala Phe Ser Val
 110 115 120
 aag aag ctg ctt act gat gac gac ctt aat gaa gac gtt cac aga gcc 497
 Lys Lys Leu Leu Thr Asp Asp Asp Leu Asn Glu Asp Val His Arg Ala
 125 130 135
 tat cta ctt cta caa ggc aaa cct ttg gat gct ctt ctg gaa act atg 545

Tyr Leu Leu Leu Gln Gly Lys Pro Leu Asp Ala Leu Leu Glu Thr Met
 140 145 150 155
 atc caa gaa gta aaa gaa tta ttt gag tcc caa ctg cta aaa atc aca 593
 Ile Gln Glu Val Lys Glu Leu Phe Glu Ser Gln Leu Leu Lys Ile Thr
 160 165 170
 gat tgg aac aca gaa aga ata ttt gca ttc tgt ggc tca ctg gta ttt 641
 Asp Trp Asn Thr Glu Arg Ile Phe Ala Phe Cys Gly Ser Leu Val Phe
 175 180 185
 gag atc aca ttt gcg act cta tat gga aaa att ctt gct ggt aac aag 689
 Glu Ile Thr Phe Ala Thr Leu Tyr Gly Lys Ile Leu Ala Gly Asn Lys
 190 195 200
 aaa caa att atc agt gag cta agg gat gat ttt ttt aaa ttt gat gac 737
 Lys Gln Ile Ile Ser Glu Leu Arg Asp Asp Phe Phe Lys Phe Asp Asp
 205 210 215
 atg ttc cca tac tta gta tct gac ata cct att cag ctt cta aga aat 785
 Met Phe Pro Tyr Leu Val Ser Asp Ile Pro Ile Gln Leu Leu Arg Asn
 220 225 230 235
 gaa gaa tct atg cag aag aaa att ata aaa tgc ctc aca tca gaa aaa 833
 Glu Glu Ser Met Gln Lys Lys Ile Ile Lys Cys Leu Thr Ser Glu Lys
 240 245 250
 gta gct cag atg caa gga cag tca aaa att gtt cag gaa agc caa gat 881
 Val Ala Gln Met Gln Gly Gln Ser Lys Ile Val Gln Glu Ser Gln Asp
 255 260 265
 ctg ctg aaa aga tac tat agg cat gac gat tct gaa ata gga gca cat 929
 Leu Leu Lys Arg Tyr Tyr Arg His Asp Asp Ser Glu Ile Gly Ala His
 270 275 280
 cat ctt ggc ttt ctc tgg gcc tct cta gca aac acc att cca gct atg 977
 His Leu Gly Phe Leu Trp Ala Ser Leu Ala Asn Thr Ile Pro Ala Met
 285 290 295

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445 450 455
 ctg ctg att gag ctt tta act tat ttt gat tta gaa att atc gac agg 1505
 Leu Leu Ile Glu Leu Leu Thr Tyr Phe Asp Leu Glu Ile Ile Asp Arg
 460 465 470 475
 aag cct ata ggg cta aat cac agt cgg atg ttt tta ggt att cag cac 1553
 Lys Pro Ile Gly Leu Asn His Ser Arg Met Phe Leu Gly Ile Gln His
 480 485 490
 ccc gat tct gcc gtc tcc ttt agg tac aaa gca aaa tct tgg aga agc 1601
 Pro Asp Ser Ala Val Ser Phe Arg Tyr Lys Ala Lys Ser Trp Arg Ser
 495 500 505
 tga aagtgtggca gagaagcttt gcagagtaag gctgcatgtg ctgagctccg 1654

 tgatttgggtg cactccccca aatgcaaccg ctactcttgt ttgaaaatgg caaatittata 1714
 ttigtgtgag atcaatccag ttggttttgg gtcacaaaac ctgtcataaa ataaagcagt 1774
 gtgatggttt aaaaaatgtc atggcaatca tttcaggata aggtaaaata acattttcaa 1834
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<210> 806

<211> 507

<212> PRT

<213> Mus musculus

<400> 806

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1

5

10

15

Leu Leu Gly Leu Leu Phe Ala Ala Thr Leu Leu Leu Ser Ala Leu Phe

20

25

30

Leu Leu Thr Arg Arg Thr Arg Arg Pro Arg Glu Pro Pro Leu Ile Lys

35

40

45

Gly Trp Leu Pro Tyr Leu Gly Met Ala Leu Lys Phe Phe Lys Asp Pro
 50 55 60
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 65 70 75 80
 Val Phe Leu Val Gly Lys Tyr Ile Thr Phe Val Leu Asn Pro Phe Gln
 85 90 95
 Tyr Gln Tyr Val Thr Lys Asn Pro Lys Gln Leu Ser Phe Gln Lys Phe
 100 105 110
 Ser Ser Arg Leu Ser Ala Lys Ala Phe Ser Val Lys Lys Leu Leu Thr
 115 120 125
 Asp Asp Asp Leu Asn Glu Asp Val His Arg Ala Tyr Leu Leu Leu Gln
 130 135 140
 Gly Lys Pro Leu Asp Ala Leu Leu Glu Thr Met Ile Gln Glu Val Lys
 145 150 155 160
 Glu Leu Phe Glu Ser Gln Leu Leu Lys Ile Thr Asp Trp Asn Thr Glu
 165 170 175
 Arg Ile Phe Ala Phe Cys Gly Ser Leu Val Phe Glu Ile Thr Phe Ala
 180 185 190
 Thr Leu Tyr Gly Lys Ile Leu Ala Gly Asn Lys Lys Gln Ile Ile Ser
 195 200 205
 Glu Leu Arg Asp Asp Phe Phe Lys Phe Asp Asp Met Phe Pro Tyr Leu
 210 215 220
 Val Ser Asp Ile Pro Ile Gln Leu Leu Arg Asn Glu Glu Ser Met Gln
 225 230 235 240
 Lys Lys Ile Ile Lys Cys Leu Thr Ser Glu Lys Val Ala Gln Met Gln
 245 250 255
 Gly Gln Ser Lys Ile Val Gln Glu Ser Gln Asp Leu Leu Lys Arg Tyr
 260 265 270
 Tyr Arg His Asp Asp Ser Glu Ile Gly Ala His His Leu Gly Phe Leu

275	280	285
Trp Ala Ser Leu Ala Asn Thr Ile Pro Ala Met Phe Trp Ala Met Tyr		
290	295	300
Tyr Ile Leu Arg His Pro Glu Ala Met Glu Ala Leu Arg Asp Glu Ile		
305	310	315
Asp Ser Phe Leu Gln Ser Thr Gly Gln Lys Lys Gly Pro Gly Ile Ser		
325	330	335
Val His Phe Thr Arg Glu Gln Leu Asp Ser Leu Val Cys Leu Glu Ser		
340	345	350
Thr Ile Leu Glu Val Leu Arg Leu Cys Ser Tyr Ser Ser Ile Ile Arg		
355	360	365
Glu Val Gln Glu Asp Met Asn Leu Ser Leu Glu Ser Lys Ser Phe Ser		
370	375	380
Leu Arg Lys Gly Asp Phe Val Ala Leu Phe Pro Pro Leu Ile His Asn		
385	390	395
Asp Pro Glu Ile Phe Asp Ala Pro Lys Glu Phe Arg Phe Asp Arg Phe		
405	410	415
Ile Glu Asp Gly Lys Lys Lys Ser Thr Phe Phe Lys Gly Gly Lys Arg		
420	425	430
Leu Lys Thr Tyr Val Met Pro Phe Gly Leu Gly Thr Ser Lys Cys Pro		
435	440	445
Gly Arg Tyr Phe Ala Val Asn Glu Met Lys Leu Leu Leu Ile Glu Leu		
450	455	460
Leu Thr Tyr Phe Asp Leu Glu Ile Ile Asp Arg Lys Pro Ile Gly Leu		
465	470	475
Asn His Ser Arg Met Phe Leu Gly Ile Gln His Pro Asp Ser Ala Val		
485	490	495
Ser Phe Arg Tyr Lys Ala Lys Ser Trp Arg Ser		
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<210> 807

<211> 490

<212> DNA

<213> Mus musculus

<400> 807

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gtgtgctggt gttatcctcg ttgtccacgt ctccgttccg taatcggcca ttttgcttct 180
cctgttttct ttcttcttgt agaataatcag caattgtatt gagtaggtaa ttttaagaatt 240
catgggcatc ttgttgcatt tagttgtcaa acagctcggt ttctttccgc aaccttgtga 300
tgaacttctt gggcgggcatc acgccgacct tcttcttctg ggtggctatg ctgtggaaga 360
ggcttgccag gcaggtgaga aagggtccct ttttctggg ctgacttttg tatgctagaa 420
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<210> 808

<211> 1073

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (65).. (850)

<400> 808

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Met Lys Glu Leu Ile Leu Leu Gly Leu Tyr Leu Leu Gly Ser Ala

1 5 10 15

caa gga gca cca cca ggt cag cct gag gag ctt ctt gac tct gta gac 157

Gln Gly Ala Pro Pro Gly Gln Pro Glu Glu Leu Leu Asp Ser Val Asp

20 25 30

caa caa gct tcg gtt cag caa ctt tca agc gag tat ctc tca ctc gca 205

Gln Gln Ala Ser Val Gln Gln Leu Ser Ser Glu Tyr Leu Ser Leu Ala

35 40 45

aac cct tca gat gcc gag gct tta tat gaa act cct tta gat gag aag 253

Asn Pro Ser Asp Ala Glu Ala Leu Tyr Glu Thr Pro Leu Asp Glu Lys

50 55 60

act ctg agt ggt cat agt tca agt gaa cag gaa tca agt gag cat gct 301

Thr Leu Ser Gly His Ser Ser Ser Glu Gln Glu Ser Ser Glu His Ala

65 70 75

gta gct gaa cat tct gca ggt gag cac tct tca gga gaa cag tct tca 349

Val Ala Glu His Ser Ala Gly Glu His Ser Ser Gly Glu Gln Ser Ser

80 85 90 95

gaa cac atg tca ggt gac cac atg tca gga gag cac ttg tca gaa cac 397

Glu His Met Ser Gly Asp His Met Ser Gly Glu His Leu Ser Glu His

100 105 110

act tca gag gag cac tcc tcg ggc gag cac act tcc acc gag cac act 445

Thr Ser Glu Glu His Ser Ser Gly Glu His Thr Ser Thr Glu His Thr

115 120 125

tca ggt gaa caa cct gca act gaa cag tcc tca agt gac cag ccc tcc 493

Ser Gly Glu Gln Pro Ala Thr Glu Gln Ser Ser Ser Asp Gln Pro Ser

130 135 140

gaa gca tct tca ggt gaa gtt tcg ggt gac gaa gca ggt gaa cag gtg 541

Glu Ala Ser Ser Gly Glu Val Ser Gly Asp Glu Ala Gly Glu Gln Val

145 150 155

tct agc gag aca aat gac aaa gaa aat gat gct atg agt aca cca ctt 589
 Ser Ser Glu Thr Asn Asp Lys Glu Asn Asp Ala Met Ser Thr Pro Leu
 160 165 170 175
 cca agc aca tct gca gcc ata aca tta aat tgc cac aca tgt gct tat 637
 Pro Ser Thr Ser Ala Ala Ile Thr Leu Asn Cys His Thr Cys Ala Tyr
 180 185 190
 atg aat gat gat gca aaa tgt ctc cgt gga gaa gga gta tgc acc act 685
 Met Asn Asp Asp Ala Lys Cys Leu Arg Gly Glu Gly Val Cys Thr Thr
 195 200 205
 caa aac tcc cag cag tgc atg tta aag aag atc ttt gaa ggt gga aaa 733
 Gln Asn Ser Gln Gln Cys Met Leu Lys Lys Ile Phe Glu Gly Gly Lys
 210 215 220
 ctc cag ttc atg gtt caa ggg tgt gag aac atg tgc cca tct atg aac 781
 Leu Gln Phe Met Val Gln Gly Cys Glu Asn Met Cys Pro Ser Met Asn
 225 230 235
 ctc ttc tct cat gga aca aga atg caa att atg tgc tgt cgg aat gaa 829
 Leu Phe Ser His Gly Thr Arg Met Gln Ile Met Cys Cys Arg Asn Glu
 240 245 250 255
 cct ctc tgc aac aag gtc tag atgcccgtgc cctacttctt gctctgactt 880
 Pro Leu Cys Asn Lys Val
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<210> 809

<211> 261

<212> PRT

<213> Mus musculus

<400> 809

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				20					25					30	
Gln	Ala	Ser	Val	Gln	Gln	Leu	Ser	Ser	Glu	Tyr	Leu	Ser	Leu	Ala	Asn
				35					40					45	
Pro	Ser	Asp	Ala	Glu	Ala	Leu	Tyr	Glu	Thr	Pro	Leu	Asp	Glu	Lys	Thr
				50					55					60	
Leu	Ser	Gly	His	Ser	Ser	Ser	Glu	Gln	Glu	Ser	Ser	Glu	His	Ala	Val
				65					70					75	
Ala	Glu	His	Ser	Ala	Gly	Glu	His	Ser	Ser	Gly	Glu	Gln	Ser	Ser	Glu
									85					90	
His	Met	Ser	Gly	Asp	His	Met	Ser	Gly	Glu	His	Leu	Ser	Glu	His	Thr
									100					105	
Ser	Glu	Glu	His	Ser	Ser	Gly	Glu	His	Thr	Ser	Thr	Glu	His	Thr	Ser
				115					120					125	
Gly	Glu	Gln	Pro	Ala	Thr	Glu	Gln	Ser	Ser	Ser	Asp	Gln	Pro	Ser	Glu
				130					135					140	
Ala	Ser	Ser	Gly	Glu	Val	Ser	Gly	Asp	Glu	Ala	Gly	Glu	Gln	Val	Ser
				145					150					155	
Ser	Glu	Thr	Asn	Asp	Lys	Glu	Asn	Asp	Ala	Met	Ser	Thr	Pro	Leu	Pro
									165					170	
Ser	Thr	Ser	Ala	Ala	Ile	Thr	Leu	Asn	Cys	His	Thr	Cys	Ala	Tyr	Met
				180					185					190	
Asn	Asp	Asp	Ala	Lys	Cys	Leu	Arg	Gly	Glu	Gly	Val	Cys	Thr	Thr	Gln
				195					200					205	

Asn Ser Gln Gln Cys Met Leu Lys Lys Ile Phe Glu Gly Gly Lys Leu
 210 215 220
 Gln Phe Met Val Gln Gly Cys Glu Asn Met Cys Pro Ser Met Asn Leu
 225 230 235 240
 Phe Ser His Gly Thr Arg Met Gln Ile Met Cys Cys Arg Asn Glu Pro
 245 250 255
 Leu Cys Asn Lys Val
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<210> 810

<211> 108

<212> DNA

<213> Mus musculus

<400> 810

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<210> 811

<211> 2831

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (328).. (1941)

<400> 811

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Met Ala Trp Pro Gly Thr Gly Pro Ser

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agc cgg ggg gcg cct gga ggc gtc ggg ctc agg ctg ggg ctg ctg ctg				402
Ser Arg Gly Ala Pro Gly Gly Val Gly Leu Arg Leu Gly Leu Leu Leu				
10	15	20	25	
cag ttc ctc ctg ctc ctg cgg ccg aca ctg ggg ttc ggg gac gag gag				450
Gln Phe Leu Leu Leu Leu Arg Pro Thr Leu Gly Phe Gly Asp Glu Glu				
	30	35	40	
gag cgg cgc tgc gac ccc atc cgc atc gcc atg tgc cag aac ctc ggc				498
Glu Arg Arg Cys Asp Pro Ile Arg Ile Ala Met Cys Gln Asn Leu Gly				
	45	50	55	
tac aac gtg acc aag atg ccc aac tta gtg gga cac gag ctg cag aca				546
Tyr Asn Val Thr Lys Met Pro Asn Leu Val Gly His Glu Leu Gln Thr				
	60	65	70	
gac gcc gag ctg cag ctg aca act ttc acg ccg ctc atc cag tac ggc				594
Asp Ala Glu Leu Gln Leu Thr Thr Phe Thr Pro Leu Ile Gln Tyr Gly				
	75	80	85	
tgc tcc agc cag ctg cag ttc ttc ctt tgt tgc gtt tat gtg cca atg				642
Cys Ser Ser Gln Leu Gln Phe Phe Leu Cys Ser Val Tyr Val Pro Met				
90	95	100	105	
tgc aca gag aag atc aac atc ccc atc ggc ccg tgc ggt ggc atg tgc				690
Cys Thr Glu Lys Ile Asn Ile Pro Ile Gly Pro Cys Gly Gly Met Cys				
	110	115	120	
ctt tca gtc aag aga cgc tgt gaa cca gtc ctg aga gaa ttt ggg ttt				738

Leu Ser Val Lys Arg Arg Cys Glu Pro Val Leu Arg Glu Phe Gly Phe
 125 130 135
 gcc tgg ccc gac acc ctg aac tgc agc aag ttc ccg ccc cag aac gac 786
 Ala Trp Pro Asp Thr Leu Asn Cys Ser Lys Phe Pro Pro Gln Asn Asp
 140 145 150
 cac aac cac atg tgc atg gaa gga cca ggt gat gaa gag gtt ccc ttg 834
 His Asn His Met Cys Met Glu Gly Pro Gly Asp Glu Glu Val Pro Leu
 155 160 165
 ccc cac aag act ccc atc cag ccc ggg gaa gag tgc cac tcc gtg gga 882
 Pro His Lys Thr Pro Ile Gln Pro Gly Glu Glu Cys His Ser Val Gly
 170 175 180 185
 agc aat tct gat cag tac atc tgg gtg aag agg agc ctg aac tgt gtt 930
 Ser Asn Ser Asp Gln Tyr Ile Trp Val Lys Arg Ser Leu Asn Cys Val
 190 195 200
 ctc aag tgt ggc tac gat gct ggc ttg tac agc cgc tca gct aag gag 978
 Leu Lys Cys Gly Tyr Asp Ala Gly Leu Tyr Ser Arg Ser Ala Lys Glu
 205 210 215
 ttc acg gat att tgg atg gct gtg tgg gcc agc ctc tgc ttc atc tcc 1026
 Phe Thr Asp Ile Trp Met Ala Val Trp Ala Ser Leu Cys Phe Ile Ser
 220 225 230
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 Thr Thr Phe Thr Val Leu Thr Phe Leu Ile Asp Ser Ser Arg Phe Ser
 235 240 245
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 Tyr Pro Glu Arg Pro Ile Ile Phe Leu Ser Met Cys Tyr Asn Ile Tyr
 250 255 260 265
 agc att gct tat att gtt cgg ctg act gta ggc cgg gaa agg ata tcc 1170
 Ser Ile Ala Tyr Ile Val Arg Leu Thr Val Gly Arg Glu Arg Ile Ser
 270 275 280

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Cys Asp Phe Glu Glu Ala Ala Glu Pro Val Leu Ile Gln Glu Gly Leu	
285 290 295	
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Lys Asn Thr Gly Cys Ala Ile Ile Phe Leu Leu Met Tyr Phe Phe Gly	
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Met Ala Ser Ser Ile Trp Trp Val Ile Leu Thr Leu Thr Trp Phe Leu	
315 320 325	
gca gcc gga ctc aag tgg ggt cat gaa gcc att gaa atg cac agt tct	1362
Ala Ala Gly Leu Lys Trp Gly His Glu Ala Ile Glu Met His Ser Ser	
330 335 340 345	
tat ttc cac atc gca gcc tgg gct att ccc gca gtg aaa acc att gtc	1410
Tyr Phe His Ile Ala Ala Trp Ala Ile Pro Ala Val Lys Thr Ile Val	
350 355 360	
atc ttg att atg aga cta gtg gat gcc gat gaa ctg act ggc ttg tgc	1458
Ile Leu Ile Met Arg Leu Val Asp Ala Asp Glu Leu Thr Gly Leu Cys	
365 370 375	
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Tyr Val Gly Asn Gln Asn Leu Asp Ala Leu Thr Gly Phe Val Val Ala	
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Pro Leu Phe Thr Tyr Leu Val Ile Gly Thr Leu Phe Ile Ala Ala Gly	
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Leu Val Ala Leu Phe Lys Ile Arg Ser Asn Leu Gln Lys Asp Gly Thr	
410 415 420 425	
aag aca gac aag ttg gaa agg cta atg gtc aag atc ggg gtc ttc tca	1650
Lys Thr Asp Lys Leu Glu Arg Leu Met Val Lys Ile Gly Val Phe Ser	

430	435	440	
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Val Leu Tyr Thr Val Pro Ala Thr Cys Val Ile Ala Cys Tyr Phe Tyr			
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gaa atc tca aac tgg gca ctc ttt cga tat tct gca gat gac tca aac			1746
Glu Ile Ser Asn Trp Ala Leu Phe Arg Tyr Ser Ala Asp Asp Ser Asn			
460	465	470	
atg gca gtt gaa atg ttg aaa att ttt atg tct ttg ctc gtg ggc atc			1794
Met Ala Val Glu Met Leu Lys Ile Phe Met Ser Leu Leu Val Gly Ile			
475	480	485	
act tca ggc atg tgg att tgg tct gcc aaa act ctt cac acg tgg caa			1842
Thr Ser Gly Met Trp Ile Trp Ser Ala Lys Thr Leu His Thr Trp Gln			
490	495	500	505
aag tgt tct aac cga ttg gtg aat tct ggg aag gta aag aga gag aag			1890
Lys Cys Ser Asn Arg Leu Val Asn Ser Gly Lys Val Lys Arg Glu Lys			
510	515	520	
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Arg Gly Asn Gly Trp Val Lys Pro Gly Lys Gly Asn Glu Thr Val Val			
525	530	535	
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actcacccaa ctgagcatca gaagaccaat ggcttcactg cagacttttg aatgggtccaa			2111
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gatctataaa cactggaaat gctgggttgg gagacgtgtt gcagagtttt tataatngttt			2411
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1950/2644

Glu Pro Val Leu Arg Glu Phe Gly Phe Ala Trp Pro Asp Thr Leu Asn
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 Cys Ser Lys Phe Pro Pro Gln Asn Asp His Asn His Met Cys Met Glu
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 165 170 175
 Pro Gly Glu Glu Cys His Ser Val Gly Ser Asn Ser Asp Gln Tyr Ile
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 Trp Val Lys Arg Ser Leu Asn Cys Val Leu Lys Cys Gly Tyr Asp Ala
 195 200 205
 Gly Leu Tyr Ser Arg Ser Ala Lys Glu Phe Thr Asp Ile Trp Met Ala
 210 215 220
 Val Trp Ala Ser Leu Cys Phe Ile Ser Thr Thr Phe Thr Val Leu Thr
 225 230 235 240
 Phe Leu Ile Asp Ser Ser Arg Phe Ser Tyr Pro Glu Arg Pro Ile Ile
 245 250 255
 Phe Leu Ser Met Cys Tyr Asn Ile Tyr Ser Ile Ala Tyr Ile Val Arg
 260 265 270
 Leu Thr Val Gly Arg Glu Arg Ile Ser Cys Asp Phe Glu Glu Ala Ala
 275 280 285
 Glu Pro Val Leu Ile Gln Glu Gly Leu Lys Asn Thr Gly Cys Ala Ile
 290 295 300
 Ile Phe Leu Leu Met Tyr Phe Phe Gly Met Ala Ser Ser Ile Trp Trp
 305 310 315 320
 Val Ile Leu Thr Leu Thr Trp Phe Leu Ala Ala Gly Leu Lys Trp Gly
 325 330 335
 His Glu Ala Ile Glu Met His Ser Ser Tyr Phe His Ile Ala Ala Trp
 340 345 350
 Ala Ile Pro Ala Val Lys Thr Ile Val Ile Leu Ile Met Arg Leu Val

355	360	365
Asp Ala Asp Glu Leu Thr Gly Leu Cys Tyr Val Gly Asn Gln Asn Leu		
370	375	380
Asp Ala Leu Thr Gly Phe Val Val Ala Pro Leu Phe Thr Tyr Leu Val		
385	390	395
Ile Gly Thr Leu Phe Ile Ala Ala Gly Leu Val Ala Leu Phe Lys Ile		400
	405	410
Arg Ser Asn Leu Gln Lys Asp Gly Thr Lys Thr Asp Lys Leu Glu Arg		415
	420	425
Leu Met Val Lys Ile Gly Val Phe Ser Val Leu Tyr Thr Val Pro Ala		430
	435	440
Thr Cys Val Ile Ala Cys Tyr Phe Tyr Glu Ile Ser Asn Trp Ala Leu		445
	450	455
Phe Arg Tyr Ser Ala Asp Asp Ser Asn Met Ala Val Glu Met Leu Lys		460
465	470	475
Ile Phe Met Ser Leu Leu Val Gly Ile Thr Ser Gly Met Trp Ile Trp		480
	485	490
Ser Ala Lys Thr Leu His Thr Trp Gln Lys Cys Ser Asn Arg Leu Val		495
	500	505
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                                         Met Ala Ser Pro Ala
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gac agc tgt atc cag ttt acc cgg cac gct agt gat gtt ctt ctc aac 163
Asp Ser Cys Ile Gln Phe Thr Arg His Ala Ser Asp Val Leu Leu Asn
          10           15           20
ctt aat cgc ctc cgg agt cgg gac atc ttg acg gac gtt gtc atc gtg 211
Leu Asn Arg Leu Arg Ser Arg Asp Ile Leu Thr Asp Val Val Ile Val
          25           30           35
gtg agc cgt gag cag ttt aga gcc cat aag aca gtg ctc atg gcc tgc 259
Val Ser Arg Glu Gln Phe Arg Ala His Lys Thr Val Leu Met Ala Cys
          40           45           50
agc ggc ctg ttc tac agt atc ttc act gac cag ttg aaa tgc aac ctt 307
Ser Gly Leu Phe Tyr Ser Ile Phe Thr Asp Gln Leu Lys Cys Asn Leu
          55           60           65
agt gta atc aat cta gat cct gaa atc agc cct gag ggg ttt tgc atc 355
Ser Val Ile Asn Leu Asp Pro Glu Ile Ser Pro Glu Gly Phe Cys Ile
          70           75           80           85
ctc ctg gac ttc atg tac aca tct agg ctc aac ctg agg gaa ggc aat 403
Leu Leu Asp Phe Met Tyr Thr Ser Arg Leu Asn Leu Arg Glu Gly Asn
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Ile Met Ala Val Met Thr Thr Ala Met Tyr Leu Gln Met Glu His Val

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Val Asp Thr Cys Arg Lys Phe Ile Lys Ala Ser Glu Ala Glu Met Ala			
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Met Pro His Asp Ile Met Ala Tyr Arg Gly Arg Glu Val Val Glu Asn			
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aat atg cca ctg aga aat act ccc ggg tgt gag agc aga gct ttt gct			643
Asn Met Pro Leu Arg Asn Thr Pro Gly Cys Glu Ser Arg Ala Phe Ala			
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Pro Pro Leu Tyr Ser Gly Leu Ser Thr Pro Pro Ala Ser Tyr Pro Met			
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Tyr Ser His Leu Pro Leu Ser Thr Phe Leu Phe Ser Asp Glu Glu Leu			
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Ala Leu Pro Cys Asp Ser Ala Arg Gln Val Pro Asn Glu Tyr Ser Arg			
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cca gcc atg gag gtg tcc ccc agt ttg tgt cac agc aac atc tac tcg			883
Pro Ala Met Glu Val Ser Pro Ser Leu Cys His Ser Asn Ile Tyr Ser			
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ccc aag gag gca gtc cca gag gag gct cgg agt gac ata cac tac agt			931